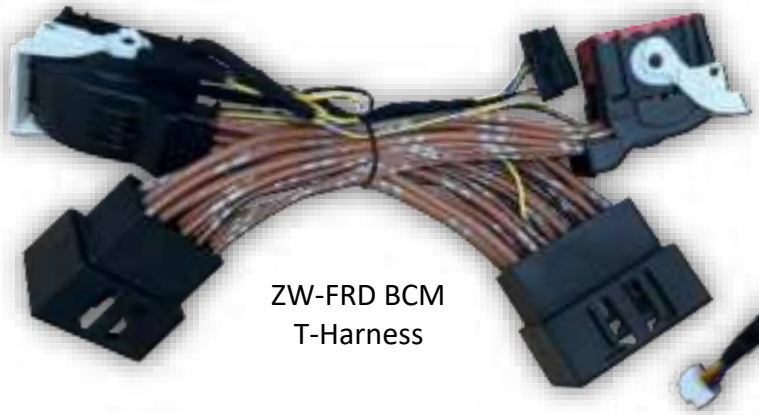
ZW-FRD

Overview

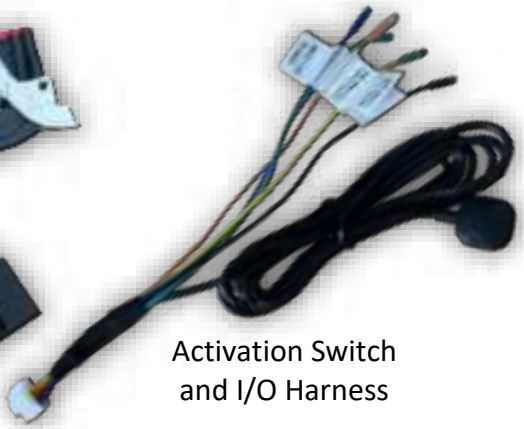
The ZW-FRD is an advanced Plug & Play integration module designed for specific Ford vehicles, for flashing OEM lights in wig-wag similar method with a simple press of a button. This unit comes pre-programmed with various light patterns and has on-board options for disabling specific lights.

Kit Content

ZW-FRD Module

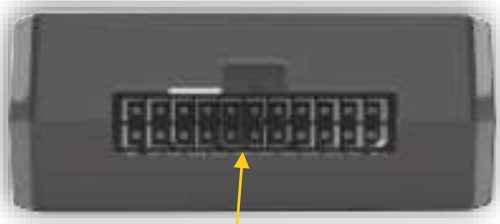


ZW-FRD BCM
T-Harness

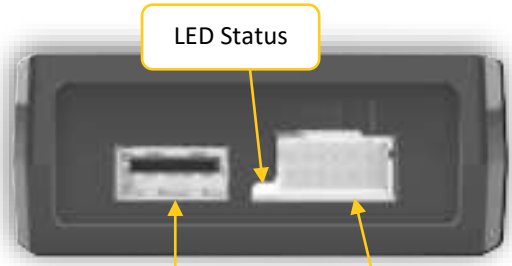


Activation Switch
and I/O Harness

Module Connections



22-Pin (power/data connections)



LED Status

USB (updates/software info)

12-PIN push button
I/O harness

Dip Switch bank
(options)

ZW-FRD Operation:

1. Connect the Z-WAGZ unit to the factory Body Control Module (BCM). *Follow instructions on page 3* for more details and important information with this process.
2. Turn Ignition ON or start vehicle *(Ignition must be ON or vehicle running for proper operation)*
3. ***To activate Z-WAGZ:***
    - Press and HOLD the ***high beam*** lever (5 sec) OR
    - Press and HOLD the provided push button (3 sec) OR
    - Send a 12v (+) signal to the ***blue wire*** (designed to be extended for OE up-fitter switches or any aftermarket toggle). *For this input method, as long as the wire has 12v (+), the Z-WAGZ unit will stay active.*

Pattern 1 will begin to flash. Once pattern 1 begins, the cluster turn signal (indicators) will blink 1 time, indicating Pattern 1 has been selected. The LED on the unit will blink BLUE. *See chart on page 4 for remaining pattern color indication.*

4. ***To switch to Pattern 2:*** (Pattern 1 must be currently active)
    - Engage either turn signal, then press and HOLD the ***high beam*** lever once more (5 sec). OR
    - Press & release the provided push button one time

The cluster turn signal (indicators) will blink twice indicating Pattern 2 has been selected. *Repeat this process to switch to the next pattern*.

5. ***To deactivate Z-WAGZ:***
    - Press and HOLD the ***high beam*** lever (5 sec) OR
    - Press and HOLD the provided push button (3 sec) OR
    - Release 12v (+) signal to the ***blue wire*** (if connected this way) OR
    - Turn vehicle OFF

PLOW MODE will slow the currently selected pattern down, and fully disable High and Low beams from flashing. When ***INPUT 2 (violet)*** receives 12v (+) before activating the flasher, PLOW MODE is enabled.

General Z-WAGZ Notes

- Not all lights on the vehicle are necessarily used, some lights are not controllable via CAN data commands.
- Z-WAGZ will retain the last used pattern, even after being disconnected from the harness (if ever).
- Turn signals, headlights, reverse lights & brakes will override pattern flashing when used, until turned off again.
- Lights on the external mirrors will only flash if wired with turn signals from factory.
- 'Plow Mode', when active (INPUT 2), disables High & Low beam flashing and slows the pattern down so that the relay box (plow module) can keep up with the flashing (prevents overheating).
- *If vehicle is equipped with physical actuators* that activate for high beams/low beams, ZZ2 highly suggests disabling that beam from flashing (otherwise mechanical failure may occur quickly)
- Some vehicle models have a time limit for running (to save gas, etc), disable this on the radio by going to SETTINGS>VEHICLE>VEHCILE POWER DOWN TIMER

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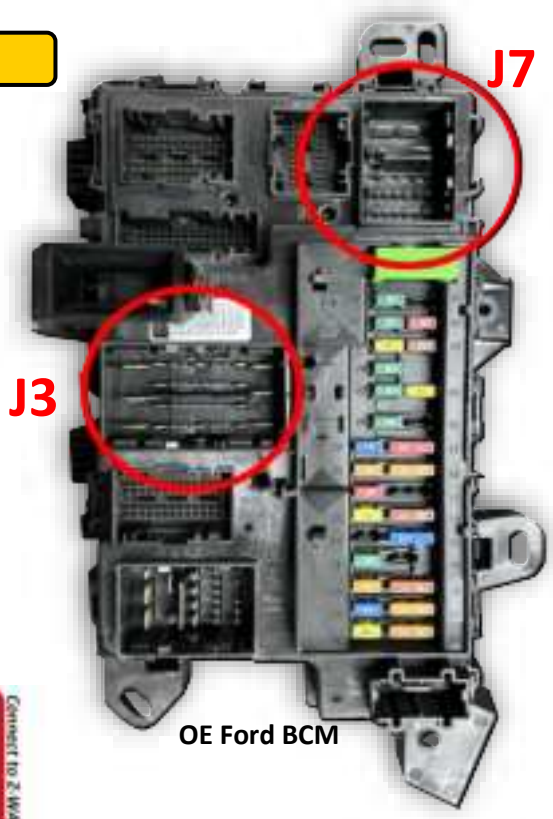
ZW-FRD

ZW-FRD Installation

1. Locate the BCM unit. The chart below indicates the BCM location in various vehicles.
2. With the vehicle OFF: disconnect the (2) circled plugs shown. Connect the male side of each T-Harness to the BCM and the (removed) plugs into the female side of the Z-WAGZ BCM harnessing. These connectors can only fit in one place and connect in one way.
3. Connect the Z-WAGZ BCM unit to the 22-pin connector, tie-wrap the unit to another harness if desired.
4. Return to page (2) for operation instructions.



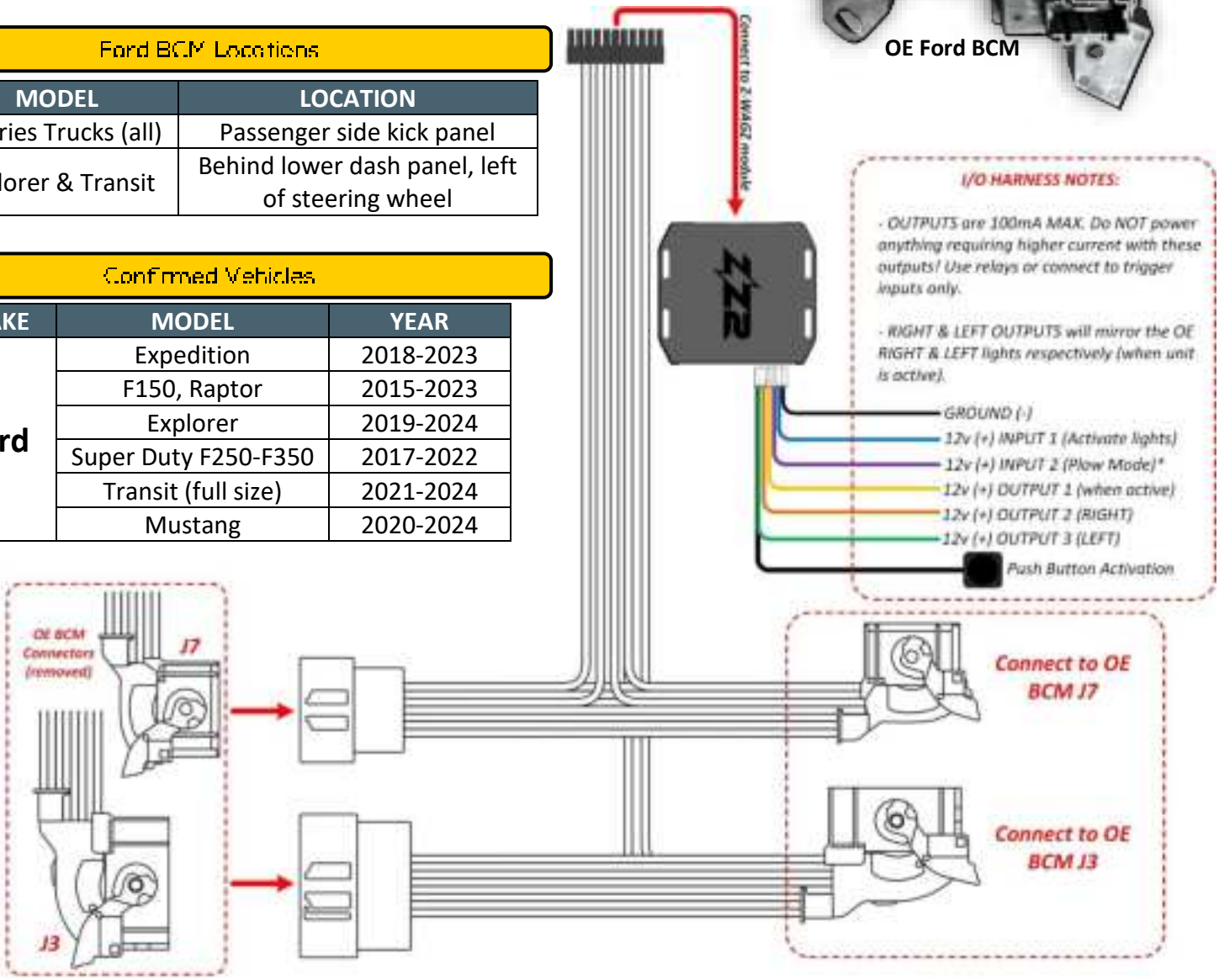
OE Ford BCM

Ford BCM Locations

MODEL	LOCATION
F-Series Trucks (all)	Passenger side kick panel
Explorer & Transit	Behind lower dash panel, left of steering wheel

Confirmed Vehicles

MAKE	MODEL	YEAR
Ford	Expedition	2018-2023
	F150, Raptor	2015-2023
	Explorer	2019-2024
	Super Duty F250-F350	2017-2022
	Transit (full size)	2021-2024
	Mustang	2020-2024



DIP Switch Settings (software: v1.6)

Located on the back side of the unit is a bank of (6) dip switches – you will need a pick-tool to adjust.

All dip switches are LIVE, do not unplug the module to adjust.

DIP	1	2	3	4	5	6
ON	***Disable*** *High Beam*	***Disable*** *Low Beam*	***Enable Reverse Light*** *(may cause reverse camera to blink while active)*	***[HI/LO INT]*** LEAVE OFF* (DEFAULT)	***Disable STROBE Mode*** *(Removes strobe every 3 seconds)*	*BRAKE + SIGNAL* ***SEPARATE***
OFF	***Enable*** *High Beam*	***Enable*** *Low Beam*	***Disable Reverse Light***	***[HI/LO INT]*** LEAVE OFF* (DEFAULT)	***Enable*** *STROBE Mode*	*BRAKE + SIGNAL* ***TOGETHER***

SOFTWARE V1.6 NOTES:

- Rear DRLs will stay ON solid when Turn-Signal Priority is active

- Rear DRLs will stay ON solid during strobe mode

*- If **turn signals or DRLs** never flash in patterns 1-7, try pattern 8*

*- If **high beams** never flash, turn ON DIP 2 or try pattern 6*

*- If **brake lights** never flash, try pattern 7*

*- *Turning DIP 4 ON may correct ability to flash low and high beams, but if used, installer must check priority lights for proper function (low beam overrides, high beam overrides, blinker overrides etc) or risk loss of priorities which could be a safety hazard.*

- *'Plow Mode'*, when active (INPUT 2), disables High & Low beam flashing and slows the pattern down so that the relay box (plow module) can keep up with the flashing (prevents overheating). This should be enabled whenever a plow is connected. *NOTE: this input must see 12v (+) before activating the Z-WAGZ for proper functionality.*

- When high beam is ON (high beam priority), low beam will be OFF and will not flash. This is a Ford limitation.

- When low beam is ON (low beam priority), high beam will be OFF and will flash. This is a Ford limitation.

- When high beam is flashing, low beam will not flash. Many Ford trucks will not be able to flash both high and low at the same time; you may choose one or the other by using DIP 1 or DIP 2 (see above chart).

- To flash DRLs, you must disable low beam (cannot flash low beam and DRLs at the same time). This is a Ford limitation.

- If low beam priority fails, disable high beam flashing (DIP switch 1 ON).

- When the vehicle is turned OFF, all flashing and unit will also deactivate.

- High Beam Lever act / External Button act / INPUT 1 +12V act requires Ignition ON to function properly. There is currently no way to activate the flasher unit when ignition is OFF.

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ZW-FRD LED Status / Patterns [SW: v1.8]

START-UP INDICATION		
Description	***LED Status***	***More Information***
Initial Wake Up	Blinks BLUE (1 time)	Upon initial power connection
Unit recognizes CAN bus (car side ONLY)	Blinks BLUE (3 times)	Upon CAN data wake
Unit recognizes CAN bus (module side ONLY)	Blinks GREEN (3 times)	Upon CAN data wake
Unit recognizes CAN bus (properly)	Binks BLUE, GREEN (x3)	Upon CAN data wake
Unit detects ACC info	Blinks GREEN (1 time)	Upon Turning Ignition ON
Unit detects GEAR info	Blinks VIOLET (1 time)	Upon switching transmission to Reverse gear
Unit detects HIGH BEAM pull OR External button press (for activation)	Solid GREEN	Upon pressing High Beam lever or provided push button
Unit receives negative response for light commands	Blinks VILOET (x3)	*--Contact ZZ2--*
Unit not receiving confirmation for light commands	Blinks RED (x1)	*--Contact ZZ2--*
When unit goes to sleep	Blinks WHITE (x1)	When CAN shuts down
CAN bus communication problem	Blinks RED + GREEN	While Z-WAGZ is activated
PATTERN INDICATION		
Description	***LED Status***	***More Information***
Pattern 1	Blinks BLUE	***BASE PATTERN***
Pattern 2	Blinks GREEN	***WATERFALL PATTERN***
Pattern 3	Blinks RED	***DOUBLE BLINK PATTERN (double back & forth)***
Pattern 4	Blinks LIGHT BLUE	***SINGLE BLINK PATTERN (single back & forth)***
Pattern 5	Blinks VIOLET	***SINGLE BLINK PATTERN (NO RED FLASH ON REAR)***
Pattern 6	Blinks YELLOW	***SINGLE BLINK PATTERN (TYPE 2) (HI INOP)***
Pattern 7	Blinks BLUE/GREEN	***SINGLE BLINK PATTERN (TYPE 3) (BRK INOP)***
Pattern 8	Blinks BLUE/RED	***EXTRA PATTERN, DRL/TRN SIG INOP (LIGHTNING PATTERN)***
POWER CONSUMPTION / ADDITIONAL SPECS		
Description	***Specification***	***More Information***
Current Draw Active:	100mA max	
Current Draw idle:	7mA max	
INPUT 1 Trigger wire act:	12v (+)	Hardwire activation trigger
INPUT 2 Trigger wire act:	12v (+)	Hardwire activate PLOW mode
OUTPUT 1: 12v (+)	100mA max	Outputs 12v (+) whenever unit is active
OUTPUT 2 (RIGHT): 12v (+)	100mA max	Mimics RIGHT turn signal pattern
OUTPUT 3 (LEFT): 12v (+)	100mA max	Mimics LEFT turn signal pattern
Trigger wire idle:	3.3V	
Current limit:	10mA	

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