



INSTRUCTION MANUAL

ZW-RAM

Advanced lighting module integration designed for 2025 RAM

REV 1.0

1) OVERVIEW

The ZW-RAM is an advanced lighting module integration designed for 2025 RAM for flashing OEM lights in wig-wag similar method with a simple press of a button. This unit requires a manual hard-wired installation but comes pre-programmed with various light patterns and has on-board options for disabling specific lights.

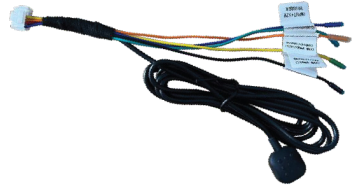
2) COMPONENTS



• ZW-RAM Module

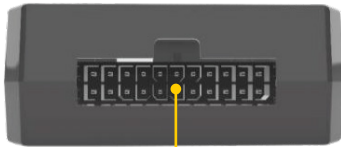


• ZW-RAM Hard-Wire Harness

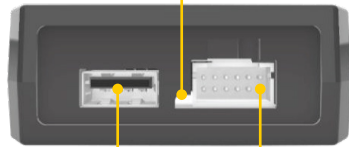


• Activation Switch and I/O Harness

3) MODULE CONNECTIONS

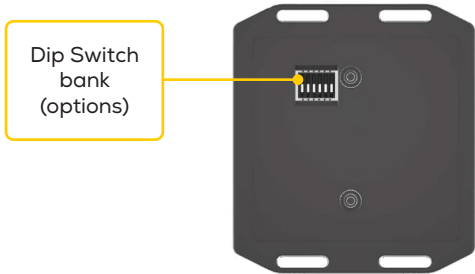


22-Pin (power/data connections)



USB (updates/software info)

12-PIN push button I/O harness



Dip Switch bank (options)



4) OPERATION

1. Connect the Z-WAGZ unit to the OE Security Gateway Module. **Follow instructions on page 3 for direct wiring installation steps.**

2. Turn Ignition ON or start vehicle (Ignition must be on for proper operation)

3. **To activate Z-WAGZ:**

- Press and HOLD the provided push button (3 sec) OR
- Provide a 12v (+) signal to the **blue wire, INPUT 2** (designed to be extended for OE up-fitter switches or any aftermarket toggle)

Pattern 1 will begin to flash. Once pattern 1 begins, the turn signal indicators in the gauge cluster will blink 1 time then stay solid, indicating Pattern 1 has been selected. The LED on the unit will blink **BLUE**. See chart on page 5 for remaining pattern color indication.

4. **To switch to next pattern:** (flashing must be currently active)

- Press & release the provided push button one time

The on-board LED indicates that Pattern 2 has been selected (see chart on page 5 for patterns and LED indications). Repeat this process to switch to the next pattern.

5. **To deactivate Z-WAGZ:**

- Press and HOLD the provided push button (3 sec) OR
- Remove 12v (+) signal to the **blue wire INPUT 1** (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.

5) GENERAL NOTES

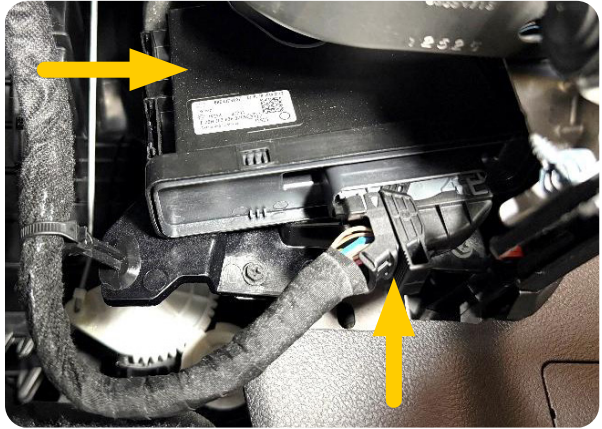
- Not all lights on the vehicle are necessarily used; some lights are not controllable via CAN data commands.
- Many lights do NOT blink when the engine is running (see chart with available pattern indications) for this module currently.
- Z-WAGZ will retain the last used pattern, even after being disconnected from the harness (if ever).
- Turn signals, headlights & reverse lights will override pattern flashing when used, until turned off again.
- Lights on the external mirrors will only flash if connected with turn signals.
- 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)
- The 7-way trailer plug will mimic flashing of the turn signals while the module is activated
- When vehicle is moving, the Reverse and Parking lights on Trailer output 7-way plug will stop flashing
- The ZW-RAM does not have the following priority lights: High Beams, Turn Signals
- '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).
- 2025 RAM vehicles have a vehicle timer and will shut down the engine when running for a specific amount of time – this will also deactivate the ZW-RAM. This is a vehicle limitation, although there may be ways to keep the engine running longer for Diesel trucks. Contact your RAM dealer for more information.

6) RAM INSTALL

1. Make sure the vehicle is fully OFF, with driver door OPEN for 5 full minutes before connecting unit.

2. Locate the factory Security Module. In 2025+ RAM trucks, it is mounted underneath steering wheel to the right of the gas pedal. The module has a single 93-pin connector (Fig 1).

3. With the driver door OPEN & vehicle OFF (for 5 mins minimum): disconnect the main latched 93-pin connector from the Security Gateway module. Strip back the factory interior tape to expose a few inches of wire. It may help here to remove the OE plastic cover (must be pried off)



4. Connect **Ground (-)**, **12v Constant (+)** & **(2) sets CAN wires** to the main Gateway harness as shown in the diagram on the next page (or use chart below). **DO NOT cut any wires in half. Do not use T-Taps on CAN connections – use a military-splice method or twist & wrap method. OEM CAN wire pairs will be twisted.**

5. Lastly, connect the Z-WAGZ unit to the 22-pin connector, tie-wrap the unit to another harness if desired.

6. Reconnect the 93-pin connector back to the security gateway properly, make sure the clasp fully seats.

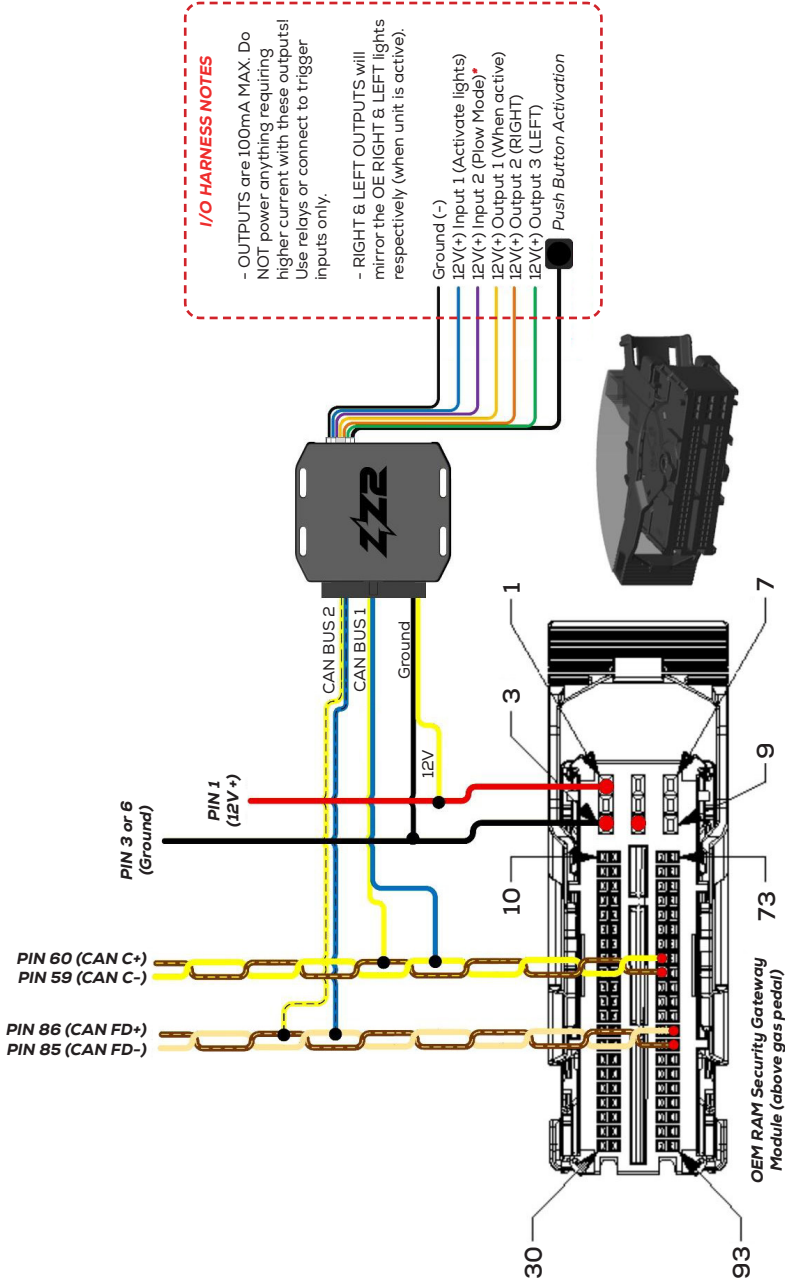
7. Connect, run and place the provided push button (12-pin) to a convenient location for access from the driver.

8. Optionally, connect any optional wires provided from the I/O harness, see diagram below.

9. Return to page (2) for operation instructions.

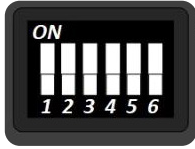
ZW-RAM PIN	ZW-RAM COLOR	OEM SG PIN	OEM SG COLOR	FUNCTION
12	Black	3 or 6	Black	Ground (-)
1	Yellow	1	Red	12V Constant (+)
6	Blue	59	Yellow	CAN Low (C)
17	Yellow	60	Brown / Yellow	CAN High (C)
8	Blue / Black	85	Beige	CAN Low (FD)
19	Yellow / Black	86	Brown / Beige	CAN High (FD)

7) INSTALLATION DIAGRAM

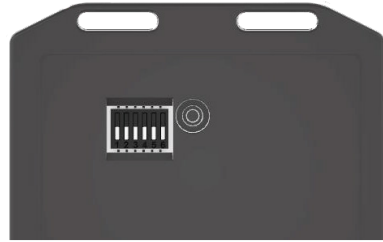


8) DIP SWITCH SETTINGS

8.1 - SOFTWARE V1.0



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	ON ▼	OFF ▲
1	Disable High Beam	Enable High Beam
2	Disable Low Beam	Enable Low Beam
3	Enable Reverse Light (May cause reverse camera to show on screen while active)	Disable Reverse Light
4	Halogen lights (slower)	LED lights (faster)
5	Disable STROBE Mode (Removes strobe every 3 seconds)	Enable STROBE Mode
6	Disable Trailer lights flashing output (7-way)	Enable Trailer lights flashing output (7-way)

9) LED STATUS / PATTERNS

9.1 - SOFTWARE V1.0

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)	Blinks BLUE, GREEN (3 times)	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 gears
UNIT RECEIVES NEGATIVE RESPONSE FOR LIGHT COMMANDS	Blinks VIOLET (3 times)	--Contact ZZ2--
UNIT NOT RECEIVING CONFIRMATION FOR LIGHT COMMANDS	Blinks RED (1 time)	--Contact ZZ2--
WHEN UNIT GOES TO SLEEP	Blinks WHITE (1 time)	When CAN data goes to sleep
CAN BUS COMMUNICATION PROBLEM	Blinks RED + GREEN	While Z-WAGZ is activated

PATTERN INDICATION		
Description	LED Status	More Information
PATTERN 1	Blinks BLUE	SINGLE BLINK PATTERN (RIGHT & LEFT)
PATTERN 2	Blinks GREEN	SINGLE BLINK PATTERN (Variation 2 - Slower)
PATTERN 3	Blinks RED	SINGLE BLINK PATTERN (Variation 3)
PATTERN 4	Blinks LIGHT BLUE	SINGLE BLINK PATTERN (Variation 4 - only mirrors & high beams)
PATTERN 5	Blinks VIOLET	SINGLE BLINK PATTERN (TOP & BOTTOM)
PATTERN 6	Blinks YELLOW	SINGLE BLINK PATTERN (Variation 2 - Slower)
PATTERN 7	Blinks BLUE / GREEN	SINGLE BLINK PATTERN (ON & OFF)
PATTERN 8	Blinks BLUE / RED	DOUBLE BLINK PATTERN (RIGHT & LEFT)
PATTERN 9	Blinks GREEN / RED	DOUBLE BLINK PATTERN (Variation 2 - Alternate sequence back side)
PATTERN 10	Blinks BLUE / LIGHT BLUE	DOUBLE BLINK PATTERN (TOP & BOTTOM)

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
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	--

9.2 - RAM SUPPORTED LIGHTS**FRONT LIGHTS**

SUPPORTED LIGHTS	DIP PARAMETER	More Information
LOW BEAMS	Dip Adjustable	Won't flash when engine is running
FRONT TURN SIGNALS	N/A	--
HIGH BEAMS	Dip Adjustable	--
FOG LIGHTS	N/A	Won't flash when engine is running
MIRROR TURN SIGNAL LIGHTS	N/A	--
MIRROR TASK LIGHTS	N/A	Model-dependent

REAR LIGHTS

SUPPORTED LIGHTS	DIP PARAMETER	More Information
3RD BRAKE LIGHT	N/A	Won't flash when engine is running
REAR TURN SIGNALS	N/A	--
REVERSE LIGHTS	Dip Adjustable	Won't flash when engine is running
BED LIGHTS (CARGO)	N/A	Won't flash when engine is running
LEFT/RIGHT TRAILER TURN SIGNALS	N/A	--
TRAILER REVERSE LIGHTS	N/A	Won't flash when engine is running
TRAILER RUNNING LIGHTS	N/A	Won't flash when engine is running



WARRANTY PROCEDURE

1. TECHNICAL EVALUATION REQUIRED

*Before a Return Merchandise Authorization (RMA) can be issued, the dealer must contact ZZ2 Technical Support to obtain a ticket number. After diagnosis, the ticket is forwarded to the ZZ2 Sales Department, which will issue the appropriate RMA number. No return will be authorized until the product has been fully evaluated.

2. ADVANCED REPLACEMENT OPTION

*Once a ticket number is issued, an RMA will be created. Call tag eligibility is based on the original purchase date.

*Within the First 90 Days: Advanced replacement at no cost with a call tag.

*After 90 Days: Advanced replacement at no cost; dealer is responsible for return shipping.

3. DEFECTIVE UNIT RETURN WITHOUT ADVANCED REPLACEMENT

*Dealers may return defective units without receiving an advanced replacement. Credits will be applied to the dealer's ZZ2 account.

4. NON-DEFECTIVE RETURNS

All non-defective returns are subject to a 10% restocking fee. Products must be brand new, unused, fully resellable, and include all original packaging, accessories, and components.

TERMS OF LIABILITY

*By purchasing, distributing, or installing ZZ2 products, dealers agree that ZZ2 is not liable for direct, indirect, special, or consequential damages, injuries, or losses arising from the use or misuse of its products

WARRANTY COVERAGE

* 3-Year Warranty: ZZPLAY, DIZZPLAY, Camera Interface Products, OEM-Style Handle Cameras.

*1-Year Warranty: ZEUS-ULTRA2, ZZAIR-DUO2, ZZAIR-PRO2, ZZCONNECT+, ZWAGZ, Bike2Play, MPPLAY.

REFUND PROCESSING

* Approved returns are processed within 5–10 business days after the returned product has been received and inspected.



If you have any questions or
require technical support, please
contact our specialized team.

ZZ2.COM