VEHICLE SYSTEM INTERFACE MODULE (VSIM)

The Vehicle System Interface Module (VSIM) is specifically designed to make it easy to upfit RAM trucks. The VSIM has many hard wired inputs and outputs (through the VSIM jumper harnesses) . It also has J1939 communication bus output signals as well as input commands starting in 2019. The VSIM allows the upfitter turn on certain features or functions with hardwired or J1939 commands. It also a outputs signals and relay driver control circuits based on the vehicle information.
The VSIM is required for PTO functionality but the PTO will not work unless there is PTO Prep on the truck. For 2019 the VSIM is standard on the Chassis Cabs. It is a stand alone option or part of a package on 2500 and 3500 pick ups, including box off pick ups**. The VSIM cannot be added to the vehicle after assembly. It is not a dealer or after market installable feature and must be ordered from the factory as standalone option or part of a package or option on pick up trucks.**

All VSIM Inputs, Outputs and J1939 signals only function when the vehicle is awake and the vehicle communication bus is active except for Door Lock and Unlock inputs. The VSIM will not function with the key in the off position and the bus asleep except for those inputs. Outputs such as gear position, including Park Position will turn off when the VSIM goes to sleep (vehicle communication bus goes to sleep). An example would be turning the ignition off with no other feature keeping the vehicle awake.

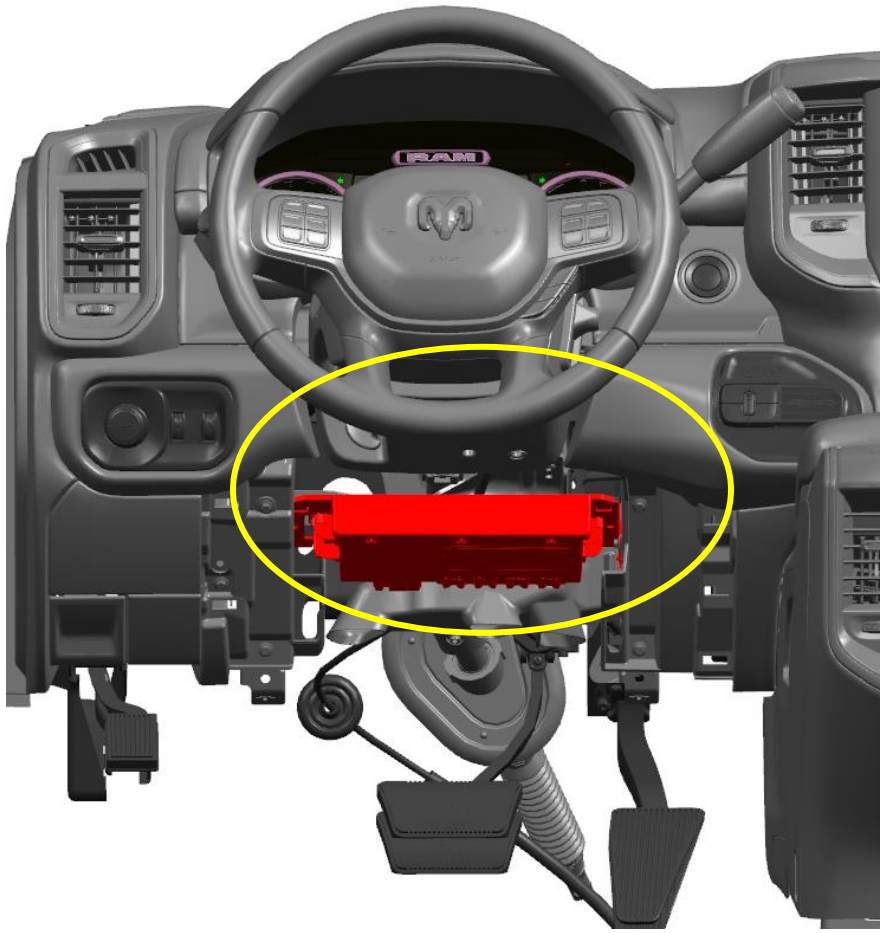
This document shows the following information:

- Location of the VSIM ,which is new for 2019
- Location of the VSIM Jumper Connectors (use caution to make sure they are plugged into the correct location)
- VSIM Hardwired Input and Output information
- VSIM J1939 SAE and Ram Specific Input Commands and Output Messages

VSIM General Information

VSIM LOCATION

The VSIM location changed for 2019. The VSIM is now located underneath the Steering Column behind the steering column trim cover (knee blocker).



VSIM Location

VSIM Jumper Harnesses

The VSIM Jumper Harnesses with the Brown, Black, Green and Gray connectors and blunt cut wires on the opposite end. The Brown, Black and Green Connectors plug directly into the VSIM connectors. They must be plugged into the properly labeled connector. The Gray Connector plugs into the inline mating connector that is located above the accelerator pedal bracket.

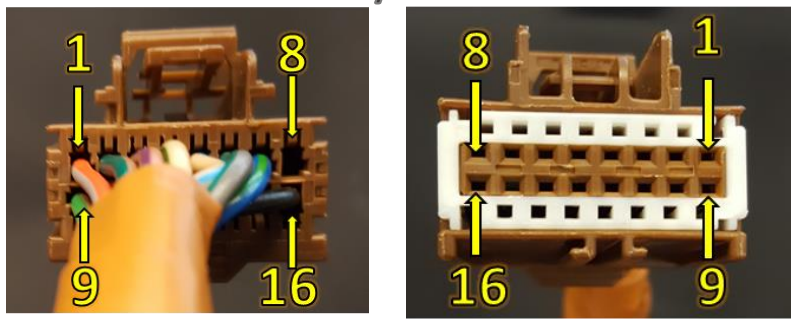
* It is recommended that when routing the harness additional harness protection such as convolute be used to protect the harness from abrasion.

VSIM Jumper Harness

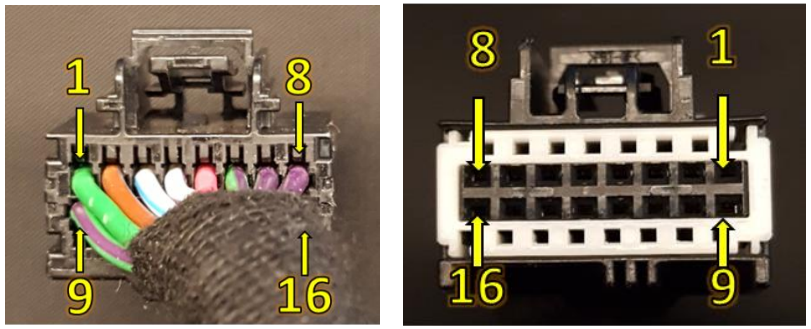
VSIM Direct Connect Jumper Harnesses

The 3 Jumper Connectors that plug directly into the VSIM

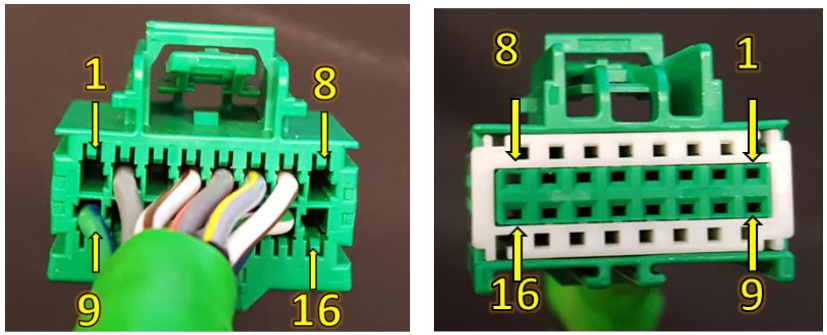
Brown 16 Cavity VSIM Connector

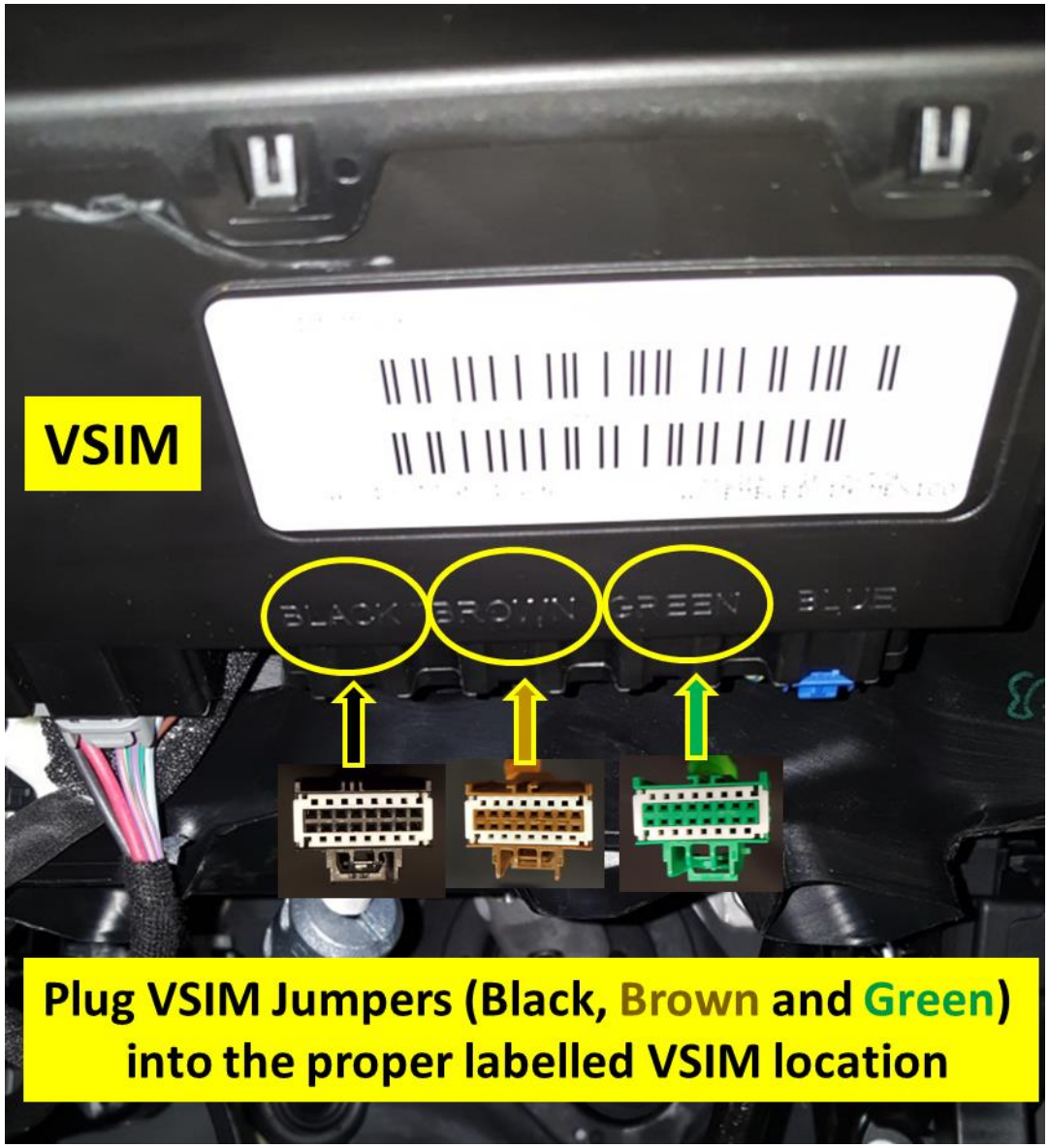


Black 16 Cavity VSIM Connector



Green 16 Cavity VSIM Connector

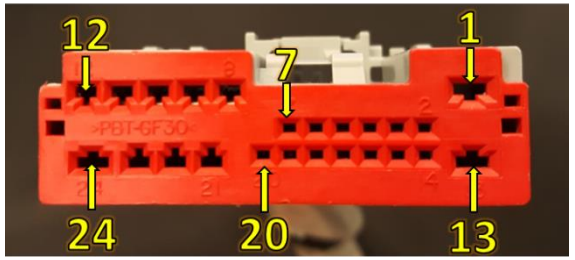


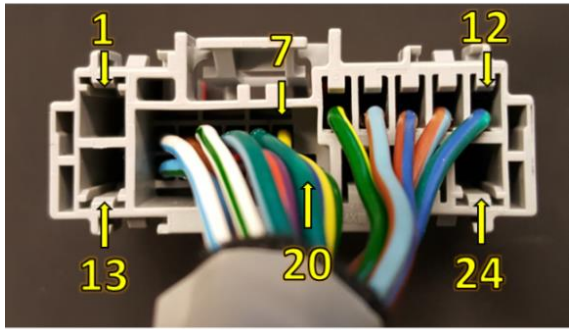


VSIM Gray 24 Cavity In-line Connector Jumper Harness

The VSIM Gray 24 Cavity In-line mating connector is locate above the accelerator pedal bracket.

Gray 24 Cavity In-Line Connector Plugs into mating connector above accelerator pedal bracket





VSIM Gray Jumper 24 Cavity In-line Connector Locations

VSIM 16 - CAVITY BLACK CONNECTOR 2019						
PIN	Upfitter VSIM Signal	Circuit	Wire Color	Max Current (Amps)	Type of Signal	Function
1	Howler Siren disable	W505	GN		HSD Output	Open circuit when vehicle speed is below 25 MPH, battery positive voltage (+12V) when vehicle speed is 25 MPH or above.
2	Horn activation	W513	BN/GY	0.5	HSD Output	Open circuit when horn not pressed (not energized), battery positive voltage (+12V) when pressed (energized).
3	Left Turn Signal	W682	WH/BU	0.5	HSD Output	Open circuit when turn signals are off High Side (+12 V) turns on and off with left turn signal
4	High Beam	W684	WH/VT	0.5	HSD Output	Open circuit when high beams off. High Side (+12 V) turns on when high beams are on.
5	Power feed "Off"	W735	PK	0.5	HSD Output	Open circuit when key position is in "Accessory/Run/Start", battery positive (+12) when key is in off position.
6	Driver Seat Belt not latched	W710	GN/VT	0.5	HSD Output	Open circuit when the drivers seat belt is latched, battery positive voltage (+12V) when the drivers seat belt is not latched (key must be in "run" position.
7	Oil Pressure Warning Signal PWM	W707	VT/GY	0.1	Digital Signal LSD PWM Output	Oil Pressure Signal: Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0 % PWM = 0 PSI, and 100 % PWM = 147 PSI.
8	Voltage Gauge PWM	W733	VT	0.5	Digital Signal LSD PWM Output	Battery Voltage Signal: Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0 % PWM = 5V, and 100 % PWM = 18V.
9	Airbag Deployed	W685	GN/VT	0.5	HSD Output	Open circuit when front airbags have not deployed during current key on cycle, battery positive (+12V) upon front airbag deployment during current key on cycle.
10	Vehicle Theft Alarm (active- alarming)	W515	VT/BU	0.5	HSD Output	Open circuit when Vehicle Theft Alarm (VTA) is not alarming. When VTA is armed and alarming (horn sounding and lamps blinking), there is a battery positive voltage (+12V).
11	Service Brake Pedal depressed	W726	DG/OG	0.25	HSD Output	Open circuit when Service Brake Pedal is not active, battery positive voltage (+12V) when the Service Brake Pedal is active (key may be in any position).
12	Power feed "Accessory"	W734	PK/GY	0.5	HSD Output	Open circuit when key position is in "Off/Run/Start", battery positive (+12) when key is in "Accessory" position.
13	Power feed "Run/Start"	W736	PK/YE	0.5	HSD Output	Open circuit when key position is in "Off/Accessory", battery positive (+12) when key is in "Run or Start" position.
14	Fuel Level Signal PWM	W538	DB/GN	0.1	Digital Signal LSD PWM Output	Fuel Level Signal: Pulse Width Modulated (PWM) between open circuit and ground, 100 Hz, linear with 0 % PWM = empty tank, and 100 % PWM = full tank.
15	Engine RPM Signal PWM	W744	BN/WT	0.25	Digital Signal LSD PWM Output	Engine RPM Signal : Pulse Width Modulated (PWM) between open circuit and ground, 0.2 HZ/RPM (12 pulses per minute per 1 RPM) @50% duty cycle.
16	Vehicle MPH speed signal PWM	W524	BN/YE	0.1	Digital Signal LSD PWM Output	Vehicle Speed Signal: Modulation between open circuit and ground, output with 10 Hz/MPH (600 pulses per minute per 1 MPH) @50% duty cycle.

VSIM Jumper 16 Cavity Black Connector 2019

VSIM 16 - CAVITY BROWN CONNECTOR 2019						
PIN	Upfitter VSIM Signal	Circuit	Wire Color	Max Current (Amps)	Type of Signal	Function
1	Cluster/Auxiliary lighting dimmer	W521	OG/GY	--	Digital Signal LSD PWM Output	Uses the vehicles instrument cluster dimmer control - will dim auxiliary lighing: PWM between open circuit and ground, output with, 100Hz, linear with 0% PWM = zero intensity, and 100% PWM = full intensity.
2	Door Unlock (All) function OUTPUT - "Unlock" all	W722	DG/BG	--	LSD Output	Relay driver, mirrors vehicle unlock All request with a ground potential for 500 ms. The vehicle need not be awake.
3	Auxiliary upfitter added flashing light front output (Front Wig Wag)	W503	BG/VT	--	LSD Output	Relay driver for front auxiliary light(s), open circuit when W500 is "OFF", grounded on (flash) on/off at 80 flashes per minute (1.333Hz square wave @ 50% duty cycle) when W500 is on.
4	Door Lock request Input	W686	BG/DG	--	Digital Signal Input Switch to Ground	Locks Doors when grounded.
5	Door Unlock request Input	W687	BG/BU	--	Digital Signal Input Switch to Ground	Unlocks Doors when grounded.
6	Radio mute signal - digital input	W640	GY/DG	--	Digital Signal Input Switch to Ground	Mutes the vehicle radio when grounded. Limited availability -- works on sales code UA1, UAV and UAX radios. Currently does not function UAA and UAM radios.
7	Engine Shutdown Timer Disable	W688	DB/GN	-	Digital Signal Input Switch to Ground	Disables the engine shutdown timer when grounded.
8	Not Used					
9	Door Lock double lock function OUTPUT "Lock" all	W721	GN/BG	0.5	LSD Output	Relay Driver, mirrors vehicle lock request with a switched ground for 500ms. The vehicle need not be awake.
10	Auxiliary upfitter added flashing lights rear output (Rear Wig Wag)	W502	BG/BN	0.25	LSD Output	Relay Driver for rear auxiliary light(s), open circuit when W501 is "OFF", grounded (flash) on/off at 80 flashes per minute (1.333 Hz square wave @ 50% duty cycle) when W501 is "ON"
11	Park Brake applied - LSD output	W725	DG/WH	0.5	LSD Output	Relay driver, open circuit when park brake not set, grounded when park brake set.
12	Wig Wag switch signal front lights digital, input.	W500	BN/OG	--	Digital Signal Input Switch to Ground	When grounded, actuates front Wig Wag lamps, vehicle front high beams, 80 flashes per minute (1.3 Hz square wave @ 50% duty cycle), also actuates circuit W503. Vehicle needs to be awake for this to funtion.
13	Panic alarm and Horn switch mute - digital input.	W537	DB/YE	--		When grounded mutes the horn during panic alarm, vehicle theft alarm and normal horn function. Does not mute horn during RKE locking function muting the horn during RKE locking can be turned on through the vehicle settings menus.
14	Wig Wag Rear Input	W501	BN/VT	--	Digital Signal Input Switch to Ground	When groundes, actuates rear wig wag function. Vehicle needs to be awake for this to function. Also activates rear wig wag VSIM output circuit W502 as well.
15	Not Used					
16	Ground - ground return	W709	BK	--	Signal Ground Return	A source for signal or switch ground (low current) - for use on VSIM switched digital inputs only

VSIM 16 - CAVITY GREEN CONNECTOR 2019						
PIN	Upfitter VSIM Signal	Circuit	Wire Color	Max Current (Amps)	Type of Signal	Function
1	Not Used			--		Not Used
2	Split Shaft PTO - digital input	W544	GY	--	Digital Signal Input Switch to Ground	When grounded, signals the controller it's ok to initiate split shaft PTO.
3	Not Used			--		
4	Rear Bulb Out Detection off - digital input	W509	WH/BN	--	Digital Signal Input Switch to Ground	When grounded, turns off rear (Turn/Tail/Brake/License/Reverse/CHMSL/Cargo) bulb fault detection: allows the use of rear LED's in place of incandescent bulbs. May be grounded before or after disconnecting the vehicles OEM incandescent bulbs.
5	PTO engine speed 1 - digital input	W541	GY/OG	--	Digital Signal Input Switch to Ground	NOTE: vehicle must have been built with PTO Prep option sales code LBN or LBV for this feature to operate. When grounded sets the PTO Remote 1 RPM (Set the desired RPM for this ciruit by using the instrument cluster programing screen, select: PTO/Remote/RPM Preset 1 - then set the desired RPM); speed 1 overrides F425 @ 900 RPM and speeds 2 & 3: RPM up/down ramp rate is is programmable in commercial settings. If not programmed the default ramp rate is 200 RPM/sec.
6	PTO engine speed 3 - digital input	W543	GY/YE	--	Digital Signal Input Switch to Ground	NOTE: vehicle must have been built with PTO Prep option sales code LBN or LBV for this feature to operate. When grounded sets the PTO Remote 1 RPM (Set the desired RPM for this ciruit by using the instrument cluster programing screen, select: PTO/Remote/RPM Preset 1 - then set the desired RPM); speed 1 overrides F425 @ 900 RPM; is overridden by speeds 1 or 2; RPM up/down ramp rate is programmable in the settings. If not programmed the default ramp rate is 200 RPM/sec.
7	Low Beam active signal - HSD output	W683	WH/BN	0.5	HSD Output	High side output is on when low beams are active
8	Not Used					Not Used
9	E-Stop Signal (Vehicles with Remote Ignition feature turned on)	W555	GN/DB		Digital Signal Input Switch to 12V Batt	On vehicles with Remote Ignition function activated, when this signal wire is connected to 12V+ will stop a running engine. **This input signal is not intended to prevent engine cranking or engine attempting to start by the key or remotely**
10	Not Used					Not Used
11	HVAC - upfitter remote A/C select - digital input	W656	BU	0.5	Digital Signal Input Switch to Ground	When grounded it commands the vehicle A/C system to be activated. If the A/C isn't on, this input will activate the A/C compressor and turn the vehicle HVAC blower to Low speed Once this circuit is activated (grounded) the vehicles blower speed control can be used to control but the blower - A/C system cannot be turned completely off. When this circuit is deactivated (un-grounded), the vehicles A/C controls returns to normal operation.
12	Separated rear tail lighting - digital input	W546	BG/GY	--	Digital Signal Input Switch to Ground	When grounded rear stop/turn lamps become turn on only (via CAN message)
13	PTO engine speed 2 - digital input	W542	GY/BN	--	Digital Signal Input Switch to Ground	NOTE: vehicle must have been built with PTO Prep option sales code LBN or LBV for this feature to operate. When grounded sets the PTO Remote 2 RPM (Set the desired RPM for this cicuit by using the instrument cluster programing screen, select: PTO/Remote/RPM Preset 2 - then set the desired RPM); speed 2 overrides F425 @ 900 RPM and speed 3 but is overridden by speed 1; RPM up/down ramp rate is programmable in the settings. If not programmed the default ramp rate is 200 RPM/sec.
14	Engine running Hour Meter - HSD output	W522	DB/BG	0.5	HSD Output	Open circuit when engin RPM < 450, battery postive voltage (+12V) when RPM > 450.
15	Park Lamp on HSD Output	W699	WH/GN	0.5	HSD Output	Open circuit when Park Lamps are not on, battery postive voltage (+12V) when Park Lamps are on.
16	Not Used					Not Used

VSIM Jumper 24 - CAVITY GRAY IN-LINE CONNECTOR 2019						
PIN	Upfitter VSIM Signal	Circuit	Wire Color	Max Current (Amps)	Type of Signal	Function
1	Not Used					Not Used
2	Hazard indicator on	W719	WH/BU	0.5	HSD Output	Open circuit when hazard flashers are off, battery positive voltage (+12V) when hazard flashers are selected.
3	Transmission out of "Park"	W504	BN	0.5	HSD Output	Open circuit when gear selector is in Park , battery positive voltage (+12V) when the gear selector is in any other position.
4	Right Turn Signal on	W681	WH/DG	0.5	HSD Output	High side relay driver output on and blinks when right turn signals are on.
5	PTO on indicator	W743	VT/BG	1	HSD Output	Open circuit when PTO circuit is not energized, battery positive voltage (+12V) when PTO circuit is energized.
6	MIL lamp on	W540	DG	0.5	HSD Output	Open circuit when MIL is not illuminated battery positive voltage (+12V) when MIL is illuminated.
7	Transmission "Park" position	W700	YE/DB	0.5	LSD Output	Open circuit when gear selector is not in Park, grounded when in Park.
8	Transmission "Neutral" position	W701	DG/YE	0.5	LSD Output	Open circuit when gear selector is not in Neutral, grounded when in Neutral.
9	HVAC - A/C Clutch engaged	W652	BU/BN	0.5	LSD Output	Open circuit when A/C Clutch is not engaged, grounded when engaged.
10	** CAN communication CAN + 250 Kbaud J1939	W533	BN/DB		J1939 Bus (+)	125 Kbaud CAN+, use in conjunction with W534*, refer to J1939 spreadsheet for available messages.
11	** CAN communication CAN - 250 Kbaud J1939	W535	BN/BU	0.5	J1939 Bus (-)	125 Kbaud CAN-, use in conjunction with W532*, refer to J1939 spreadsheet for available messages.
12	Transmission "Reverse" Position	W702	DG/DB	0.5	LSD Output	Open circuit when gear selector is not in Reverse, grounded when in Reverse.
13	Not Used					Not Used
14	HVAC - when A/C is selected via the dash switch	W689	BU/DG	0.5	LSD Output	Open circuit when A/C has not been selected, grounded when A/C has been selected.
15	Not Used					Not Used
16	Transmission "Drive" Position	W703	DG/BU	0.5	LSD Output	Open circuit when gear selector is not in Drive, grounded when in Drive.
17	Any Door Ajar	W720	VT/OG	0.5	HSD Output	Open circuit when all the doors are closed, battery voltage (+12V) when any door is ajar.
18	Passenger Seat Belt Not Latched - Only on 2500 (DJ)	W706	DG/GY	0.5	LSD Output	Open circuit when passenger seat belt is latched, grounded when passenger seat belt is not latched.
19	Passenger Seat Occupied Signal - Only on 2500 (DJ)	W554	DG/VT	0.5	LSD Output	Open circuit when passenger seat is non occupied, grounded when passenger seat is occupied.
20	Not Used					Not Used
21	Not Used					Not Used
22	Not Used					Not Used
23	Not Used					Not Used
24	Not Used					Not Used

2019 RAM Heavy Duty Truck - SAE J1939 Output Messages

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Transmission Repetition Rate (ms)	Transmission Type	Ram Specific Information
61441	Electronic Brake Controller 1	561	ASR Engine Control Active	11	100	Cyclic	ASR is RAM equivalent of Electronic Stability Control. There is no differentiation between engine and braking control, both signals will be active at the same time.
61441	Electronic Brake Controller 1	562	ASR Brake Control Active	11	100	Cyclic	ASR is RAM equivalent of Electronic Stability Control. There is no differentiation between engine and braking control, both signals will be active at the same time.
61441	Electronic Brake Controller 1	563	Antilock Braking Active	11	100	Cyclic	
61441	Electronic Brake Controller 1	1438	ABS Amber Warning Signal	11	100	Cyclic	This signal will be active lamp indicator check that occurs at key on from off.
61443	Electronic Engine Controller 2	91	Accelerator Pedal Position 1	0	50	Cyclic	
61444	Electronic Engine Controller 1	190	Engine Speed	0	speed dependent	Cyclic	
61445	Electronic Transmission Controller 2	523	Transmission Current Gear	3	100	Cyclic	Functions only on Aisin Transmissions.
64791	Beltlock and Airbag Deactivation Switch Information	4952	Driver Belt Lock Status	53	250	Cyclic	
64791	Beltlock and Airbag Deactivation Switch Information	4953	Passenger Belt Lock Status	53	250	Cyclic	
64932	PTO Drive Engagement	3948	At Least One PTO Engaged	0	100	Cyclic	
64972	Operators External Light Controls Message	2875	Hazard Light Switch	33	1000	Cyclic & On Change	
65088	Lighting Command	2348	High Beam Headlight Data	33	1000	Cyclic & On Change	
65088	Lighting Command	2350	Low Beam Headlight Data	33	1000	Cyclic & On Change	
65088	Lighting Command	2368	Left Turn Signal Lights	33	1000	Cyclic & On Change	
65088	Lighting Command	2370	Right Turn Signal Lights	33	1000	Cyclic & On Change	
65088	Lighting Command	2372	Left Stop Light	33	1000	Cyclic & On Change	
65088	Lighting Command	2374	Right Stop Light	33	1000	Cyclic & On Change	

2019 RAM Heavy Duty Truck - SAE J1939 Output Messages

Parameter Group	Parameter Group Name	Suspect Parameter	Suspect Parameter Name	Source Address	Transmission Repetition	Transmission Type	Ram Specific Information
65088	Lighting Command	2376	Center Stop Light	33	1000	Cyclic & On Change	
65088	Lighting Command	2378	Tractor Marker Light	33	1000	Cyclic & On Change	
65088	Lighting Command	2382	Tractor Clearance Light	33	1000	Cyclic & On Change	
65088	Lighting Command	2392	Back - Up Light and Alarm Horn	33	1000	Cyclic & On Change	
65088	Lighting Command	2404	Running Light	33	1000	Cyclic & On Change	
65217	High Resolution Vehicle Distance	917	High Resolution Total Vehicle Distance	33	1000	Cyclic & On Change	
65226	Active Diagnostic Trouble Codes	3038 (flash)	Flash Malfunction Indicator Lamp	0	100	Cyclic	
65226	Active Diagnostic Trouble Codes	1213 (on/off)	Malfunction Indicator Lamp Status	0	100	Cyclic	
65248	Vehicle Distance	245	Total Vehicle Distance	33	100	Cyclic	
65260	Vehicle Identification	237	Vehicle Identification Number (VIN)	33	~ 300	Cyclic	Timing is not exact due to bus translations.
65262	EngineTemperature 1	110	Engine Coolant Temperature	0	500	Cyclic	
65263	Engine Fluid Level/Pressure 1	100	Engine Oil Pressure	0	200	Cyclic	
65264	Power Takeoff Information	186	Power Takeoff Speed	0	100	Cyclic	Engine Speed, will not reflect actual PTO shaft speed when the torque converter is unlocked.
65265	Cruise Control/Vehicle Speed	70	Parking Brake Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	84	Wheel-Based Vehicle Speed	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	86	Cruise Control Set Speed	0	100	Cyclic	The last set speed value is broadcast in this message whether the cruise control is active or not.
65265	Cruise Control/Vehicle Speed	595	Cruise Control Active	0	100	Cyclic	When the value of this signal is '01' cruise control system is actively controlling vehicle speed.
65265	Cruise Control/Vehicle Speed	596	Cruise Control Enable Switch	0	100	Cyclic	When the value of this signal is '01' the cruise control enable switch is depressed.
65265	Cruise Control/Vehicle Speed	597	Brake Switch	0	100	Cyclic	

2019 RAM Heavy Duty Truck - SAE J1939 Output Messages

Parameter Group	Parameter Group Name	Suspect Parameter	Suspect Parameter Name	Source Address	Transmission Repetition	Transmission Type	Ram Specific Information
65265	Cruise Control/Vehicle Speed	596	Cruise Control Enable Switch	0	100	Cyclic	When the value of this signal is '01' the cruise control enable switch is depressed.
65265	Cruise Control/Vehicle Speed	597	Brake Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	599	Cruise Control Set Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	600	Cruise Control Coast Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	601	Cruise Control Resume Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	602	Cruise Control Accelerate Switch	0	100	Cyclic	
65265	Cruise Control/Vehicle Speed	976	Power Takeoff Governor State	0	100	Cyclic	
65266	Fuel Economy (Liquid)	183	Engine Fuel Rate	0	100	Cyclic	
65269	Ambient Conditions	108	Barometric Pressure	33	100	Cyclic	
65269	Ambient Conditions	171	Ambient Air Temperature	33	100	Cyclic & On Change	
65269	Ambient Conditions	172	Engine Air Intake Temperature	33	100	Cyclic	
65271	Vehicle Electrical Power 1	167	Charging System Potential	33	1000	Cyclic & On Change	
65272	Transmission Fluids 1	177	Transmission Oil Temperature	3	1000	Cyclic & On Change	
65274	Brakes	619	Parking Brake Actuator	33	1000	Cyclic	
65276	Dash Display	96	Fuel Level	33	1000	Cyclic & On Change	
64933	Door Control 2	3412	Lock Status Of Door 1	33	100	Cyclic	
64933	Door Control 2	3413	Open Status Of Door 1	33	100	Cyclic	
64933	Door Control 2	3415	Lock Status Of Door 2	33	100	Cyclic	
64933	Door Control 2	3416	Open Status Of Door 2	33	100	Cyclic	

2019 RAM Heavy Duty Truck - SAE J1939 Output Messages

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Transmission Repetition Rate (ms)	Transmission Type	Ram Specific Information
64933	Door Control 2	3418	Lock Status Of Door 3	33	100	Cyclic	
64933	Door Control 2	3419	Open Status Of Door 3	33	100	Cyclic	
64933	Door Control 2	3421	Lock Status Of Door 4	33	100	Cyclic	
64933	Door Control 2	3422	Open Status Of Door 4	33	100	Cyclic	
64933	Door Control 2	3424	Lock Status Of Door 5	33	100	Cyclic	
64933	Door Control 2	3425	Open Status Of Door 5	33	100	Cyclic	
53248	Cab Illumination Message	1487	Illumination Brightness Percent	33	1000	Cyclic & On Change	
65110	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Information	1761	Aftertreatment 1 Diesel Exhaust Fluid Tank 1 Level	0	1000	Cyclic & On Change	
64773	Direct Lamp Control Data 1	5099	Engine Oil Pressure Low Lamp Data	33	1000	Cyclic	
65266	Fuel Economy (Liquid)	184	Instanteneous Fuel Economy	0	100	Cyclic	
65253	Hours	247	Eng Total Hours Of Operation	0	1000	Cyclic	
65254	Time/Date	961	Hour	33	1000	Cyclic	
65254	Time/Date	960	Minutes	33	1000	Cyclic	
65102	Position of Doors	1821	Used to indicate the actual position of the doors.	33	100	Cyclic	

New for 2019 **J1939 RPM control:** RPM can now be controlled over CAN using through the J1939 VSIM interface while PTO is active. Signal information is in the chart below. This can be done following these steps:

- PTO must be in remote mode with J1939 selected as the RPM control
- PTO is still enabled though F425 circuit
- RPM is commanded through PGN 0, Torque/Speed Control 1 (TSC1)
  - TSC1 message definition follows SAE standard for J1939
  - SPN 695 shall be set to 0x1 when control of RPM is desired, and 0x0 otherwise
  - SPN 898 shall be set to the desired RPM within 900-2000 for AUX drive and 1200-2400 for Split Shaft.
  - Input values are handled as follows
    - Aux Drive
      - 0x0000 - 0x0384 = 900 RPM
      - 0x0384 – 0x07D0 = desired RPM from 900-2000
      - 0x07D0 – 0xFFFE = 2000 RPM
      - 0xFFFF = 900 RPM
    - Split Shaft
      - 0x0000 - 0x04B0 = 1200 RPM
      - 0x04B0 – 0x0960 = desired RPM from 1200-2400
      - 0x0960 – 0xFFFE = 2400 RPM (2000 AUX drive)
      - 0xFFFF = 1200 RPM
  - Maximum engine RPM/s response to requested set point is defined by the ramp rate selection in the Commercial Settings. See PTO menu section.
  - All other SPNs that are part of PGN 0 are don't care
- Vehicle status information such as current engine RPM can be obtained from the J1939 VSIM bus.

2019 RAM Heavy Duty Truck - SAE J1939 Input signal from external device to VSIM to vehicle systems

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Transmission Repetition Rate (ms)	Transmission Type	Ram Specific Information
0	TSC1	695	Engine Override Control mode	N/A	1000	Cyclic & On Change	Engine Override Control Mode: The override control mode defines which sort of command is used.
0	TSC1	898	Engine Requested Speed	N/A	1000	Cyclic & On Change	Parameter provided to the engine from external sources in the torque/speed control message. This is the engine speed which the engine is expected to operate at if the speed control mode is active or the engine speed which the engine is not expected to exceed if the speed limit mode is active.

2019 RPM J1939 Signals/Commands from External Device to VSIM to Vehicle Systems (Input Signals)

2019 RAM Heavy Duty Truck Specific J1939 Signals from Vehicle Systems to VSIM to external device (output signals)

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Starting Position (bit)	Size (bits)	Data Description	Data Resolution	Data Range	Transmission Repetition Rate (ms)	Transmission Type	Signal Description	Ram Specific Information
65280	Chrysler Interior	100000	A/C Clutch Engaged	33	0	1	00' off 01' clutch engaged	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when A/C clutch is engaged	
65280	Chrysler Interior	100001	A/C Select	33	1	1	00' off 01' A/C requested	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when A/C is requested either by VSIM, MTC or ATC HVAC	
65280	Chrysler Interior	100002	Ignition Position	33	3	3	'000' IGN_LK '011' IGN_OFF_ACC '100 'IGN_RUN '101' IGN_START '111' SNA	3 bits = 8 states	0 to 7	1000	Cyclic & On Change	Provides status of igntition: off, accessory, run, start	
65280	Chrysler Interior	100003	Air Bag Deployed	33	2	1	00' no Airbag deployed 01' any Airbag deployed	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follow "any impact" signal from ORC	
65280	Chrysler Interior	100004	Passenger Occupant Detection System	33	6	2	00' not occupied '01' occupied '10' error '11' sna	2 bits = 4 states	0 to 3	1000	Cyclic & On Change	Follows Passenger Occupant detect sensor Sts from ORC	Ram 1500 and 2500 only.
62581	Chrysler Exterior Lights	100005	Front Wig Wag	33	0	1	If X = 0 then y = 0 If X=1 then y shall toggle between 1 and 0 with f=1.5Hz and duty cycle = 50 %	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follows duty cycle of Wig Wags like VSIM output	
62581	Chrysler Exterior Lights	100006	Rear Wig Wag	33	1	1	If X = 0 then y = 0 If X=1 then y shall toggle between 1 and 0 with f=1.5Hz and duty cycle = 50 %	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follows duty cycle of Wig Wags like VSIM output	
65281	Chrysler Exterior Lights and Horn	100007	Howler Siren Disable	33	3	1	00' under 25 mph 01' over 25 mph	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Active when vehicle speed is over 25mph	
65281	Chrysler Exterior Lights and Horn	100008	Horn	33	2	1	00' Horn off 01' Horn on	1 bit = 2 states	0 to 1	1000	Cyclic & On Change		
65282	Chrysler Doors and Locks	100009	Door Lock Command	33	0	1	00' no door lock command 01' door lock command active	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Follow VSIM Logic	
65282	Chrysler Doors and Locks	100010	Door Unlock Command	33	1	1	00' no door unlock command 01' door unlock command active	1 bit = 2 states	0 to 1	1000	Input signal from external device to VSIM to vehicle systems	Follow VSIM Logic	

2019 RAM Heavy Duty Truck Specific J1939 Input signal from external device to VSIM to vehicle systems (input signals)

Parameter Group Number (PGN)	Parameter Group Name	Suspect Parameter Number (SPN)	Suspect Parameter Name	Source Address	Starting Position (bit)	Size (bits)	Data Description	Data Resolution	Data Range	Transmission Repetition Rate (ms)	Transmission Type	Signal Description	Ram Specific Information
65283	Chrysler Interior Command	2551	CHY_INT_CMD.ACSelect	N/A	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command A/C select on	
65283	Chrysler Interior Command	2551	CHY_INT_CMD.RadioMute	N/A	1	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to mute all entertainment audio	
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD. RrWigWag	N/A	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command rear wig wags on	
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD. FtWigWag	N/A	1	1	0 No Command 1 Command		0 to 1	1000	Cyclic & On Change	Command front wig wags on	
65284	Chrysler Exterior Lights and Horn Command	2551	CHY_ExLH_CMD.HornMute	N/A	2	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to mute all horn requests.	RKE horn function can only be disabled via the menu settings in the Radio
65285	Chrysler Doors and Locks	2551	CHY_DrLk. LockCommand*	N/A	0	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to lock door	
65285	Chrysler Doors and Locks	2551	CHY_DrLk.. UnLockCommand*	N/A	1	1	0 No Command 1 Command	1 bit = 2 states	0 to 1	1000	Cyclic & On Change	Command to unlock door	

2019 Ram Heavy Duty Truck Specific J1939 Signals/Commands from External Device to VSIM to Vehicle Systems (Input Signals)