

 NGDV – Technical Bulletin	Title: Head Unit Function and Guidance	
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Exceeding Customer Expectations through Continuous Improvement

NGDV Technical Bulletin

Head Unit Function and Guidance

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INTRODUCTION

Purpose

Procedures for how to operate the Head Unit and how to troubleshoot common issues.

Suspect Population

All ICE and BEV NGDV's

REWORK TOOLS AND MATERIAL LIST:

Tools

- No tools required

HEAD UNIT DISPLAY — DRIVER QUICK MANUAL:

Key terms

- **Home:** The default landing screen when the system starts up. Default is the MDD mirroring screen. User can select different screen while vehicle is in park and ignition is on.
- **Park Assist (PA):** The parking view with proximity aids. It uses the rear camera in Reverse and the front camera in low speed Drive.
- **Screen Off:** Driver selected black screen. Safety conditions can temporarily override it.
- **Speed thresholds:** Park Assist is active in Drive at 6 mph and below. It exits at 7 mph and above (built in 1 mph hysteresis to prevent flicker).

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FUNCTION AND BEHAVIOR

Head Unit Views:

Condition	Head Unit View
Ignition OFF	Screen OFF
Ignition ON → Park (P)	Home (Start view). If you previously pressed Screen Off, it stays OFF.
Reverse (R)	Park Assist with Reverse Camera. No speed limit; always shows.
Drive (D) at 0–6 mph	Park Assist with Front Camera. Overrides Screen Off.
Drive (D) at ≥7 mph	Your Home (same view you had in Park). If you previously pressed Screen Off, the screen stays OFF at these speeds.
Neutral (N)	Last view before shifting into N (no change just for N).

Startup behavior (after the vehicle was off):

- Short stop (Delay Off): When you turn ignition back ON shortly after shutting down, the HU returns to your last view from before it powered down.
- Long off (Deep Sleep >1hr): After a long park, the HU starts at Home (Start view).
- Aka: MDD mode

Note: If the HU shows Home after the vehicle has been off >1hr, that's normal—no settings were lost.

Screen Off: how it behaves

- You can turn the screen OFF (blank screen) only when:
- In Park
- Driving >6 mph.

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Safety overrides (temporarily turn the screen back on):

- Reverse → Park Assist with reverse camera.
- Drive ≤ 6 mph → Park Assist with front camera.

When the override ends:

- In Drive ≥ 7 mph, your Screen Off choice resumes.
- In Park, the screen remains OFF until you change it.

Why the screen changes by itself:

- **Backing up** - Reverse camera takes over always.
- **Creeping in traffic or parking (≤ 6 mph)** - Front camera Park Assist appears for close quarters awareness.
- **Cruising (≥ 7 mph)** - The HU returns to your regular Home view, or stays off if you chose Screen Off earlier.

Common scenarios:

I slowed to 5 mph in Drive and the screen woke up.

- Expected: Park Assist with front camera overrides Screen Off at low speed.

I pressed Screen Off in Park. Then I drove away.

- You'll see Park Assist at ≤ 6 mph. At ≥ 7 mph, the screen goes OFF again.

I shifted to Neutral at speed.

- The HU holds the last view from before Neutral.

I started the truck after a fuel stop.

- Likely returns to your last view (short stop). After long parking, it starts at Home.

Reference (exact thresholds):

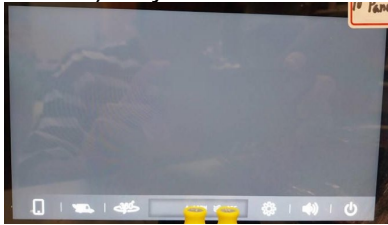
- Enter Park Assist in Drive when speed is ≤ 6 mph.
- Exit Park Assist in Drive when speed is ≥ 7 mph.
- Reverse always shows Park Assist with reverse camera, regardless of speed.

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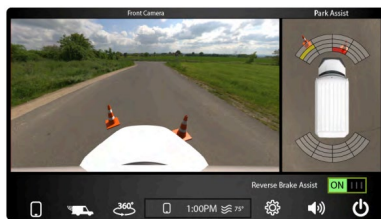
Function:

No Driver Interaction with HU

- Ignition is OFF – HU Screen is OFF
- Ignition is ON – Gear is in P – HU shows Home screen, MDD View (Black Screen w menu at the bottom) only



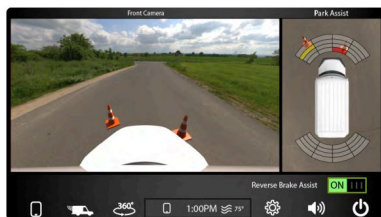
- Ignition is ON - Gear is in D – HU shows Park Assist (R/Y/G radar) & Front Camera view and 360 View



- Ignition is ON – Gear is in R – HU shows Park Assist (R/Y/G lines) & Reverse camera view and 360 view



- Ignition is ON – Gear is in D - w vehicle speeds between 0 & 6 mph. HU will show park assist screen and 360 view



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- Ignition is ON – Gear is in R – HU will show park assist & rear view & 360 view w no speed limit as long as the vehicle stays in R.



- Ignition is ON – Gear is in D – vehicle speeds in excess of 6mph – Park Assist will disappear and the MDD screen or previously selected screen will appear until the vehicle slows to 6mph where condition in bullet 5 is explained. IF the previous condition was HU OFF, then a black screen will appear until the vehicle slows to 6mps or R is selected on the GSM.
- Ignition is ON – Gear is in N – HU shows the last view before switching to N. This view will remain as long as the GSM is in N.

Driver switches screen OFF while in Park (P) or Drive (D) while driving more than 6mph.

- Ignition is ON – Gear is in P – Screen remains OFF until turned ON or will come on automatically if GSM is set to R or D.
- Ignition is ON – Gear is in D – HU shows Park Assist & Front Camera & 360 view.
- Ignition is ON – Gear is In R – HU shows Park Assist & Rear Camera & 360 view.
- Ignition is ON – Gear is in D – vehicle speed is between 0 & 6mph – HU shows Park Assist & 360 view.
- Ignition is ON – Gear is in D – vehicle speed is greater than 6mph – screen is off Park Assist will be on until you exceed 6mph, then HU will return to OFF mode.
- Ignition is ON – Gear is in D – Vehicle speed is below 7mph to 0mph – HU shows Park Assist & 360 view.
- Ignition is OFF – HU is in delay OFF (still records video for 1 hour) – When Ignition is turned to ON, HU will display the last driver selected HU view before turning OFF.
- Ignition is OFF – HU is in deep sleep – When vehicle is switched to ON HU will show MDD screen (Black screen w menu at bottom) and 360 view



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TROUBLESHOOTING

- **Issue:** Screen stays OFF while cruising
 - **Response:** You likely selected Screen Off earlier. Turn it back on via your display control.
- **Issue:** Front camera view not visible at low speed
 - **Response:** Ensure you are in Drive and ≤6 mph. Check for dirt/ice on the front camera.
- **Issue:** HU started at Home instead of my last view
 - **Response:** Normal after a long park (Deep Sleep). The system didn't lose your settings.

SAFETY NOTES:

- Cameras and Park Assist supplement your awareness; they do not replace mirrors or looking around.
- Clean camera lenses regularly. If a camera is obscured or unavailable, Park Assist may show limited visuals or guidance.

Revision History

Revision	Date	Description	Requestor

Contact Information

NGDV Product Support Line - 1 (800) 830-3554