Overview

The **REC-AV XG** adds video input (including rear camera) for select ‘06-‘08 Chrysler/Dodge/Jeep REC navigation radios. **NOTE: The REC radio must possess the 3-pin camera port on the back for this kit to be compatible.**

Kit Contents

- Camera Input Harness  
  *NTV-ASY142*
- REC-AV XG Module  
  *NTV-ASY171*
- Audio-IN Harness  
  *NTV-ASY231*
- USB Cable (updates)  
  *NTV-CAB009*
- Plug and Play T-Harness  
  *NTV-HAR087*
- CAN Adapter Harness  
  *NTV-HAR058*
- (2x) Audio RCA-3.5mm Adapter  
  *NTV-CAB054*
- AVSW Harness  
  *NTV-HAR066*
- (3x) Male barrel RCA  
  *NTV-CON018*
**REC-AV Programming**

Before the product is installed, be sure the module is programmed for needed functions. To change any one of the settings, double click the line with the feature to be enabled/disabled.

### Adjustable Parameter | Description
---|---
**VES Emulation** | Emulates rear seat entertainment for AV input (Do not turn on if vehicle already has factory VES.)
**Rear view camera** | Turns on rear camera input to add an aftermarket camera. (Also required for VES video input.)
**12V output when camera is forced** | Supplies 12v out of Pin 12 when forced camera is enabled or the when in reverse
**Front view camera** | Supplies 12v out of Pin 11 when front camera is activated.

**REC-AV Module Pin Outs**

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12v (+) Constant Power</td>
<td>Yellow</td>
</tr>
<tr>
<td>6</td>
<td>Relay 1-Common-Video OUT</td>
<td>Yellow</td>
</tr>
<tr>
<td>7</td>
<td>RCA Common Shield</td>
<td>[Shield]</td>
</tr>
<tr>
<td>8</td>
<td>CAN HI (Radio side)</td>
<td>White/Green</td>
</tr>
<tr>
<td>9</td>
<td>CAN HI (Car side)</td>
<td>Brown/Black</td>
</tr>
<tr>
<td>10</td>
<td>Ground (-)</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>Output 1 (Front cam 12v out)</td>
<td>White/Red</td>
</tr>
<tr>
<td>12</td>
<td>Output 2 (Rear cam 12v out)</td>
<td>White/Blue</td>
</tr>
<tr>
<td>13</td>
<td>Output 3 (ACC 12v + out)</td>
<td>White/Purple</td>
</tr>
<tr>
<td>15</td>
<td>Relay 1 (normally open) Vid IN</td>
<td>White</td>
</tr>
<tr>
<td>16</td>
<td>Relay 1 (normally closed) Cam IN</td>
<td>Red</td>
</tr>
<tr>
<td>17</td>
<td>CAN LO (Radio side)</td>
<td>Green</td>
</tr>
<tr>
<td>18</td>
<td>CAN LO (Car side)</td>
<td>Brown</td>
</tr>
</tbody>
</table>

**Agreement:** End user agrees to use this product in compliance with all State and Federal laws. NAV-TV Corp. would not be held liable for misuse of its product. If you do not agree, please discontinue use immediately and return product to place of purchase. This product is intended for off-road use and passenger entertainment only.
**Backup Camera:**

1. Install backup camera, run the video signal and camera power to the radio.
2. Plug the video signal into the RCA attached to the 3 pin plug.
3. The power wire of the camera gets connected to pin 12 (OUTPUT 2) or pin 13 (OUTPUT 3) of the filter.
   *Do not connect the camera power to reverse lights, otherwise forced camera will display a blank screen.*

**VES/AV Input and Rear Camera:**

The REC-AV will internally enable VES* and rear camera switching without the need for an external switcher.

1. Connect the RCA labeled “VIDEO TO RADIO” to the supplied 3-pin to RCA harness.
2. Connect the rear view camera to the RCA labeled “BACKUP CAM”. The power from the camera can be connected to pin 12 (OUTPUT 2) or pin 13 (OUTPUT 3).
3. Connect the VES/external video source to the RCA labeled “VIDEO IN”.

* Factory VES requires a send in modification for video to be viewed on the radio.
4. For Audio IN, use the provided 10-PIN connector with RCA. You will need to populate the provided connector as shown here unless this vehicle possess this same connector with existing wires. If this connector exists in the car already, populate the factory connector instead as shown here:

**Front and Rear Camera**

1. Connect the backup camera to the Yellow RCA labeled “FACTORY AV” of the AV switcher.
2. Plug the supplied 3-pin to RCA harness into the radio. Plug the other end into the Yellow RCA labeled “AV OUT” of the AV switcher.
3. The Front camera signal goes to the RCA labeled “V1” of the switcher.
4. The black wire of the switcher goes to chassis ground.
5. The white/red wire (pin 7) goes to white/red (pin 12) of the REC AV XG module.

**VES Input with Rear and Front Camera**

1. Connect the supplied 10-pin T-harness with Red and White RCAs between the radio and factory harness. (Note that there may be no factory harness in this location.)
2. Plug the audio out of external AV source to the Red and White RCAs.
3. Connect the external AV video to the Yellow RCA labeled “FACTORY AV” of the AV switcher.

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4. Plug the supplied 3-pin to RCA harness into the radio. Plug the other end into the Yellow RCA labeled “AV OUT” of the AV switcher.
5. The Front camera signal goes to the RCA labeled “V1” of the switcher.
6. The Rear camera signal goes to the RCA labeled “V2” of the switcher.
   - Note - If the vehicle has factory VES installed, do not connect audio T-harness.
   - Factory VES requires a send in modification for video to be viewed on the radio.

When the optional switcher is being used, do not use the RCAs on the REC-AV Plug-n-Play harness.
Multiple video inputs using the optional switcher (AVSW)

When installing rear camera, VES emulation and front camera, an optional switcher is required. This will allow multiple video inputs to be sourced in.

<table>
<thead>
<tr>
<th>Switcher connections</th>
<th>Input Source</th>
<th>Switcher</th>
<th>REC-AV Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory AV</td>
<td>External Video source</td>
<td>Black</td>
<td>Chassis Ground</td>
</tr>
<tr>
<td>AV out</td>
<td>3-pin to RCA plug to Radio</td>
<td>White/Red (pin 7)</td>
<td>White/Red (pin 12)</td>
</tr>
<tr>
<td>V1</td>
<td>Front Camera</td>
<td>White/Blue (pin 8)</td>
<td>White/Blue (pin 11)</td>
</tr>
<tr>
<td>V2</td>
<td>Rear Camera</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note - The audio inputs/outputs are not used.

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Operation

**VES:** Press the ‘MODE’ button until VES tab is highlighted. Once the tab is selected, the video input will automatically be displayed.

**Reverse Cam/Forced Cam:** Double press the main power button on the radio. This will automatically display the backup camera regardless of gear or motion of the vehicle. To return to the factory screen, double press the main radio power button again.

**Front Camera:** When the Front view camera feature is enabled (through programming), every time the radio is placed into forced camera mode it will toggle between the rear camera and the front camera. The order is as follows: **Radio > Rev Cam > Front Cam > Radio**

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