### Measure Your Wire Distance

All NVT quoted distance specifications include any coax in the run. It is recommended that the wire distance be measured to ensure that the capability of the NVT product is correct. Wire should be Category UTP cable. Low-voltage camera power, Video, and RS-422 or RS-485 may be sent within the same wire bundle with other Telecom or Datacom signals. No naked flame sources, such as lighted candles should be placed on the apparatus.

#### Power Supply Specifications

<table>
<thead>
<tr>
<th>B&amp;K Camera 100 mA, 2.4 W</th>
<th>2- pair AWG</th>
<th>800Ω (27mm)</th>
<th>20Ω (64Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2- pair AWG (Cable)</td>
<td>1.13Ω (54Ω)</td>
<td>2.65Ω (90Ω)</td>
</tr>
<tr>
<td>Camera Color</td>
<td>4 AWG, 4.8 W</td>
<td>4200Ω (137mm)</td>
<td>1.04Ω (32Ω)</td>
</tr>
<tr>
<td>Camera Color</td>
<td>4 AWG, 23 AWG (Cable)</td>
<td>567Ω (173mm)</td>
<td>1.33Ω (403Ω)</td>
</tr>
<tr>
<td>Camera Color</td>
<td>6 AWG, 7 W</td>
<td>300Ω (61mm)</td>
<td>68Ω (231mm)</td>
</tr>
<tr>
<td>Camera Color</td>
<td>23 AWG (Cable)</td>
<td>379Ω (115mm)</td>
<td>66Ω (208mm)</td>
</tr>
</tbody>
</table>

#### Video Distance

Wire resistance may be measured with an ohmmeter by shorting the two conductors together at the far end, and measuring the loop-resistance out and back. See Figure 2.

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### Power-Video-Data 4 or 16-Channel application

1. Connect the bare end of the Video signal output from the camera to the Male BNC pigtail connector on the NV-216A-PV or NV-216A-PVD.
2. Connect the camera’s Power input to the bare end of the Video signal output from the camera. Verify wire distance, camera load and wire resistance limit for the maximum distance that Power can travel using Figure 2 below.
3. If the camera supports P/T/zoom telemetry over RS-422 or RS-485, connect the camera’s Data terminals to the Data screwless terminals on the NV-218A-PV or NV-218A-PVD.
4. Connect the appropriate camera power terminals on the NV-704J-PV or NV-716J-PV as shown in Figure 5 (details on page 2).

### Power-Video-Data 5/7/2 camera single channel application

1. Connect the bare end of the Video signal output from the camera to the Male BNC pigtail connector on the NV-216A-PV or NV-216A-PVD.
2. Connect the camera’s Power input to the bare end of the Video signal output from the camera. Verify wire distance, camera load and wire resistance limit for the maximum distance that Power can travel using Figure 2 below.
3. If the camera supports P/T/zoom telemetry over RS-422 or RS-485, connect the camera’s Data terminals to the Data screwless terminals on the NV-218A-PV or NV-218A-PVD.
4. Connect the 4-pair Cat 5 using the 8-pin RJ45 connector on the UTP run to the Control end as shown in Figure 3 below.

### Power-Video-Data at the Camera End

#### Power-Video-Data at the Camera End

1. Connect the bare end of the Video signal output from the camera to the Male BNC pigtail connector on the NV-216A-PV or NV-216A-PVD.
2. Connect the camera’s Power input to the bare end of the Video signal output from the camera. Verify wire distance, camera load and wire resistance limit for the maximum distance that Power can travel using Figure 2 below.
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4. Connect the 4-pair Cat 5 using the 8-pin RJ45 connector on the UTP run to the Control end as shown in Figure 3 below.
Connecting the Control End Equipment

1. If the receiver is a model NV-413A, NV-652R, NV-6135, or NV-1613, connect the ground screw to the same earth ground as the remote receive-end equipment.


3. When connecting the video to the NV-813, NV-8135, NV-8612, NV-16135, NV-1662, NV-1662Q, NV-3213, NV-3213S, or NV-3262, connect UTP using 6-pair UTP connectors as shown in Figure 7.

Figure 7 Control End Plaques

Once the video signals are connected, the green "Active" LED should have a steady light, indicating that video is present. A flickering light typically means that there is something wrong with the cabling.

4. Connect the baseband video signal from the receiver to the video monitor (or other video equipment, multiplexer, etc.) using a 75 Ohm coax cable with a BNC connector, or directly to video equipment if using the NV-2838-A, NV-2144-A, NV-2164-PV or NV-2164-PVD.

5. Confirm that your monitor or other receiving equipment is correctly terminated with a single 75 Ohm terminator.

6. For best pictures using the NV-452R, NV-652R, NV-8612 or NV-3262, adjust the distance equalization controls, as follows:
   - Turn both controls to their minimum counter-clockwise position. Next, turn brightness-control clockwise until desired degree of brightness is achieved. Then turn sharpness/NT control until picture is crisp and clear, but not "grainy."

7. Connect the data pairs directly to the data output of the control end equipment. Connections to multiple cameras may be paralleled, or connected to individual ports of the RS-422 or RS-485 fan-out unit, sometimes called a "code converter."

Power-Video-Data 4-Channel Application using the NV-704J-PVD at the Telecommunications Closet or IDF

1. Connect the NV-216A-PV or the NV-218A-PVD as shown in the examples on the other side.

2. Connect the 4-pair Cat5 UTP cables coming from the cameras into the appropriate camera port on the NV-704J-PVD using the RJ45 connector as shown in Figure 3.

3. Connect the outputs of your independent power supply into the appropriate Camera Power terminals on the NV-704J-PVD. Torque to 2 in-lbs (0.22 Nm). NVT recommends the use of 18AWG (1,0 mm) solid conductor wire. NVT also recommends that the external power supply have individually floating outputs.

4. Connect the NV-704J-PVD's Control Room outputs to the NV-413A or NV-452R via UTP using RJ45 connectors and Cat5 cable. The control end plaques are shown in Figure 4, If P/T/Z telemetry is required, connect a 6-pair Cat5 cable from the data port of the DVR's RS-422 or RS-485 Code Converter (alternately known as a data distribution unit or fan-out unit). Additional details can be found in the NV-704J-PVD installation manual, or at www.nvt.com.

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