

TimberNavi™ 5 Camera Support Instructions

April 2018



Support for analog cameras was introduced with TimberNavi version 5.2.

Camera Support

Technical Overview

The TimberNavi display has four video inputs divided between two DIN M12 8-pole connectors. Both PAL and NTSC signals types are supported. The video image is displayed in an area of 1024 x 720 pixels. Smaller video feeds are expanded to fill the area, maintaining the aspect ratio of the original feed.

TimberNavi automatically turns on the power to all four channels at the start of the program. Based on available signals, up to four channel buttons are displayed in the Camera View.

The output voltage for each channel is 12VDC and has a current limit to 250 mA at 12 VDC or 1 A total between the four channels.

The cable which is used to connect the camera to the device shall be a 75-Ω coaxial cable, e.g. M17/94-RG179. Shielded cables shall be used to ensure reliable communication and EMC immunity. Consult with your John Deere dealer to obtain adaptor harnesses between the desired camera and the M12 display connector.

Turn off the machine and the TimberNavi display when installing cameras and connecting the harnesses.

Display Video Connector Interface

On the back of the TimberNavi display there are two female 8-pole M12 connectors each with two video channels. Below is the pinout chart for the connectors.

X6, X13 - Analogue Video Connector

Pin #	Default signal	Comments
1	Signal 1 GND	DIN M12 x 1 female, 8-pole, A-coded Rotation 180°
2	Signal 1 in	
3	V 1 out	
4	V 1 GND	
5	V 2 GND	
6	Signal 2 GND	
7	Signal 2 in	
8	V 2 out	
Housing	Shield	

Figure 1 TimberNavi display video input connector pinouts

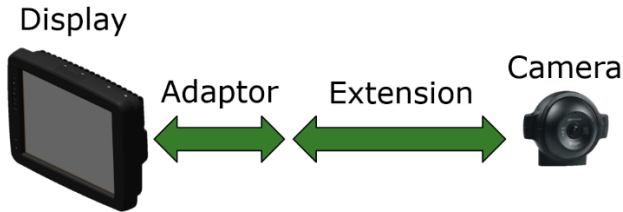
Cameras

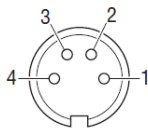
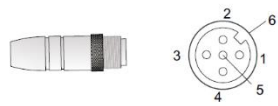
The following analog cameras are available through your John Deere dealer:

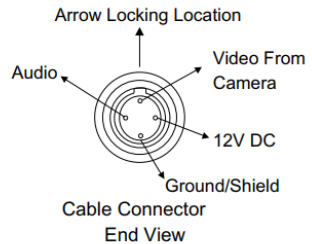
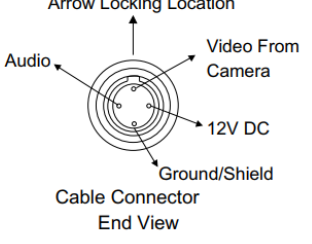
John Deere Part Number	Description
AT466877	Orlaco FAMOS NTSC 118deg
AXE41697	Motec MC6090D
SWVCM50I	Voyager ToughCam High Performance
SWVCM5155B	Voyager Camera

Camera Cable Harnesses

The type of adaptor harness and extension harness needed will vary depending on the selected camera. The chart below outlines the parts needed to connect cameras to the TimberNavi display.



Camera Part Number	Connector Pinout on Camera	Extension Harness Part Number	Adaptor to Monitor														
Orlaco FAMOS NTSC 118deg																	
AT466877	 <p>Electrical connections Front side of molded 4p male connector</p> <ul style="list-style-type: none"> 1 = Coax core = Video signal 2 = Coax screen = Video GND 3 = Red = 12...24V/DC 4 = Black/orange = 0V Shielding = To connector housing 	AT474801 (4.2m length)	Contact Ag Express for custom adaptor.														
Motec MC6090D																	
AXE41697	<p>M12/5-pole, Code A</p>  <table border="1"> <thead> <tr> <th>Pin</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Video</td> </tr> <tr> <td>2</td> <td>Mirroring</td> </tr> <tr> <td>3</td> <td>Power</td> </tr> <tr> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>Video GND</td> </tr> <tr> <td>6</td> <td>External shield</td> </tr> </tbody> </table>	Pin	Function	1	Video	2	Mirroring	3	Power	4	GND	5	Video GND	6	External shield	F689361 (4.2m length)	Extension connects directly to monitor. This supports a 2-camera setup only. Or Contact Ag Express for custom adaptor to connect 3 or more cameras.
Pin	Function																
1	Video																
2	Mirroring																
3	Power																
4	GND																
5	Video GND																
6	External shield																
Voyager ToughCam High Performance																	

SWVCMS50I		CEC34 (34ft length)	Contact Ag Express for custom adaptor.
Voyager Camera			
SWVCMS50I		CEC34 (34ft length)	Contact Ag Express for custom adaptor.

Contact Ag Express (see contact information below) for customer adaptor harnesses. Provide the connector pinout for the TimberNavi display and the pinout for the camera.









www.AgExpress.com

Des Moines, IA:

515-289-2746

dsm@agexpress.com

TimberNavi 5 Camera View Software Overview

At startup, TimberNavi detects the number of connected cameras and displays a Camera icon  in the lower-right corner of the MAP VIEW. Click the Camera icon  to switch to Camera View. In CAMERA VIEW, the video channels numbers are displayed on the right side  , , . If the video feed needs to be mirrored, press the Mirror icon  in the lower-left corner of the screen. Mirroring settings are saved for each channel. To switch back to MAP VIEW, press the map icon  in the lower-right corner.

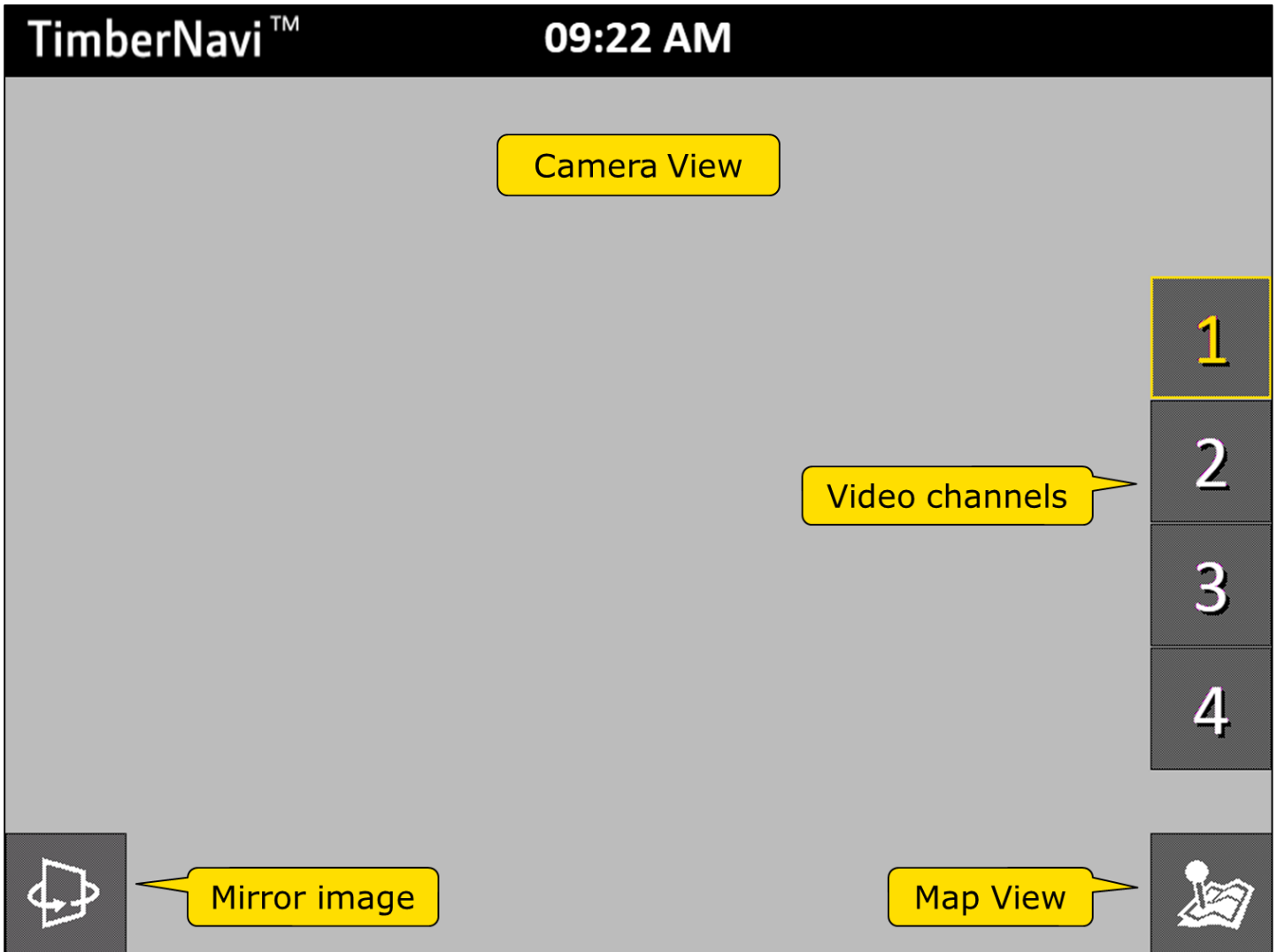


Figure 2 TimberNavi CAMERA VIEW

Table 1 CAMERA VIEW icons





Option	Definition
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #cccccc; padding: 5px; margin-bottom: 2px;">1</div> <div style="background-color: #cccccc; padding: 5px; margin-bottom: 2px;">2</div> <div style="background-color: #cccccc; padding: 5px; margin-bottom: 2px;">3</div> <div style="background-color: #cccccc; padding: 5px; margin-bottom: 2px;">4</div> </div>	<p>The number of video channels depends on the number of cameras connected to the display. If only one camera is connected the channel numbers will not be available.</p> <p>One feed at a time can be displayed on the monitor. The active channel is indicated by a highlighted (yellow) channel number.</p>
	Switch to MAP VIEW
	<p>Enable or disable mirroring of video feed.</p> <p>Setting is saved for each video channel. Highlighted (yellow) icon indicates mirroring is active.</p>

Table 2 Camera Support troubleshooting

Issue	Meaning	Troubleshooting
<p>Camera icon  does not appear</p>	<p>TimberNavi does not detect the cameras.</p> <p>Cameras not compatible with display because they have unsupported power requirements.</p>	<ol style="list-style-type: none"> 1. Restart the TimberNavi display 2. Manually turn on power to video channels: press-and-hold Menu  for 2 seconds and release. In the CC Settings window, select Power → Tap the checkmark boxes for each video channel → Exit. Close TimberNavi program: Press-and-hold TimberNavi trademark in upper-left corner for 5 seconds → Press-and-hold TimberNavi program in Taskbar for 2 seconds → Close All Windows → Double-tap TimberNavi desktop icon. 3. Contact your John Deere dealer