Arbitrator Hardware
Installation
Arbitrator SI Unit and Cables

- **AG-CPD15P**
  - P2 recorder (VPU)

- **AJ-P2C016RG**
  - 16GB P2 Card

- **AG-CK10P**
  - Camera
  - Camera Mount
  - Camera Cable (Short)
  - Camera Cable (Long)

- **AG-CR12P**
  - GPS Antenna
  - Power Cable for P2 recorder
  - External GPIO Trigger Cable
  - USB Extension Cable

- **TDSS-900-PNA**
  - Digital Wireless Mic Receiver & Transmitter
  - In Car Mic
  - Receiver Cable

- **OPTIONS**
  - 2nd Rear Camera
  - Control Panel
  - Control Panel Cable

- **AG-RCP30P**
- **CN258IR-P**
P2 Recorder, Wireless MIC to Battery Connection (w/ VPU timer)

“RED” cable: Connect via 5A fuse (Not included in Arbitrator kit) to Battery (+)
“WHITE” cable: Connect via 5A fuse (Not included in Arbitrator kit) to ACC line or switch.
Don’t connect to Battery (+)
“BLACK” cable: Connect to Battery (-)
P2 Recorder, Wireless MIC to Battery Connection (w/ Charge Guard)

“RED” cable: Connect via 5A fuse (Not included in Arbitrator kit) to Battery (+)
“WHITE” cable: Connect via 5A fuse (Not included in Arbitrator kit) to ACC line or to the Charge Guard. Don’t connect to Battery (+)
“BLACK” cable: Connect to Battery (-)

[Diagram showing connections and components]
AG-CR12P Cables for P2 Recorder

- Power Cable for P2 recorder
- External GPIO Trigger Cable
- USB Extension Cable
Network Cables (AG-CR11P), Control Panel Cable, Camera Cable

- **USB/LAN Adaptor** (including a driver CD)
- **LAN Cable** (Crossover type)
- **Control Panel Cable** (included in AG-RCP30P)
- **Camera Cable** (included in AG-CK10P)
External GPIO Trigger Cable/Power Cable Connection

- **Black (GND: -)**: Connect to the negative (-) terminal of the battery
- **Red (BATT: +)**: Connect via a 5A fuse to a power supply that is constantly on, regardless of ignition key ON/OFF status
- **White (SIGNAL)**: Connect the signal line via 5A fuse to the ACC line or to the output terminal of a timer box

Others: Input signal lines
- White: REC Tally output line
- Gray: Input signal or Speed pulse signal

RS-232C: Connect to equipment with serial connectors
## External GPIO Trigger

### External GPIO Trigger Cable (supplied)

#### Diagram:
- **External trigger cable (supplied)**
- **RS-232C**
- **Pin Numbers**
- **Cable Colors**

#### Table:

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Signal</th>
<th>Remark</th>
<th>Cable Color</th>
<th>Trigger Name (Example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>GND</td>
<td>GPIO</td>
<td>Black</td>
<td>Black MUST be grounded (To ground at Negative battery terminal)</td>
</tr>
<tr>
<td>10</td>
<td>GPIO1</td>
<td>In</td>
<td>Brown</td>
<td>Wireless Mic</td>
</tr>
<tr>
<td>11</td>
<td>GPIO2</td>
<td>In</td>
<td>Red</td>
<td>Light Bar</td>
</tr>
<tr>
<td>12</td>
<td>GPIO3</td>
<td>In</td>
<td>Orange</td>
<td>Brake Indicator</td>
</tr>
<tr>
<td>13</td>
<td>GPIO4</td>
<td>In</td>
<td>Yellow</td>
<td>Siren Indicator</td>
</tr>
<tr>
<td>21</td>
<td>GPIO5</td>
<td>In</td>
<td>Green</td>
<td>Gun Lock</td>
</tr>
<tr>
<td>22</td>
<td>GPIO6</td>
<td>In</td>
<td>Blue</td>
<td>Other</td>
</tr>
<tr>
<td>23</td>
<td>GPIO7</td>
<td>In</td>
<td>Purple</td>
<td>Other</td>
</tr>
<tr>
<td>24</td>
<td>GPIO8</td>
<td>In</td>
<td>Gray</td>
<td>Speed Sensor with pulse table setting only</td>
</tr>
<tr>
<td>25</td>
<td>GPIO9</td>
<td>Out</td>
<td>White</td>
<td>For Low Voltage Output only (LED or Relay)</td>
</tr>
</tbody>
</table>

*GPIO for Wireless Mic, Light bar, Siren etc.. as above example.
*Serial (RS-232C, Pin number either of 2-8 & 20) for Rader Gun etc
2nd Rear Camera (Option: CN258IR-P) Connection

- **2nd Camera (Front)**
- **2nd Camera (Rear)**
- **2nd Camera Cable**
- **White to Battery (+) via Timer Box**
- **Black to Battery (-)**
- **Yellow to Camera 2**
- **P2 Recorder (Rear)**

- **Car Battery 12V/24V**
Control Panel (Option: AG-RCP30P) Buttons

- **Book Mark**: Auto Zoom
- **Auto Zoom**: LCD Screen
- **Backlight Compensation**: T: Zoom In W: Zoom Out
- **REC/STOP Lamp**: REC Button
- **REC Button**: STOP Button
- **STOP Button**: Audio 2 Mute Button/Lamp
- **Audio 2 Mute Button/Lamp**: IR Mode (Auto/ON/OFF)
- **IR Mode (Auto/ON/OFF)**: Camera Select (Camera1/2)
- **Camera Select (Camera1/2)**: Volume Control
- **Volume Control**: Brightness Control
- **Brightness Control**: Cursor Button
- **Cursor Button**: Return
- **Return**: To go back to previous menu or setting
- **Menu**: Skip (Back/Forward)
- **Skip (Back/Forward)**: IR Mode (Auto/ON/OFF)
- **IR Mode (Auto/ON/OFF)**: Control Panel ON/OFF
- **Control Panel ON/OFF**: 1) Lock Lamp
- **1) Lock Lamp**: Lock except “REC”, “Menu”, “Control Panel ON/OFF”, “Return” Button while lights on
- **2) Ready Lamp**: 3) Busy Lamp
- **3) Busy Lamp**: Camera Select (Camera1/2)
- **Camera Select (Camera1/2)**: Menu
- **Menu**: Live/Archive Switching Button
- **Live/Archive Switching Button**: Lock except “REC”, “Menu”, “Control Panel ON/OFF”, “Return” Button while lights on
- **1) Lock Lamp**: Lock except “REC”, “Menu”, “Control Panel ON/OFF”, “Return” Button while lights on
- **2) Ready Lamp**: 3) Busy Lamp

**Note:** Mute Audio 2 and lamp lights on by pushing this button. No recording while muting (lights on).
Before use, Format 16G P2 card by SI

- Formatting 16G P2 card is mandatory at the first time usage.
- When modified (copy, delete, move etc) folders in P2 Card, please format the card. (If you copy the folders/files from 5 slot P2 drive or PC PCMCIA to PC HDD, please format the card.)
- The format of 16G P2 card is available by Control Panel, 5 slot P2 drive and PC PCMCIA slot.
- Note that 16GB P2 card limit the number of files that can be recorded per below chart.

<table>
<thead>
<tr>
<th># of recording days</th>
<th># of maximum recording files per day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With Bookmark</td>
</tr>
<tr>
<td></td>
<td>Without Bookmark</td>
</tr>
<tr>
<td>62 days</td>
<td>340 files</td>
</tr>
<tr>
<td></td>
<td>508 files</td>
</tr>
</tbody>
</table>

<How to format by SI?>

- Insert new 16GB P2 cards to P2 Recorder (VPU)
- Go to “Config” by SI menu and select “Operations”. Press “Format” and then select “Yes”
- (c) Press “Format” and select “Yes”. Then, “Format finished successfully” message will be appeared when the format is completed.
Before use, Format 16G P2 card by Control Panel
(Option: AG-RCP30P)

- Formatting 16G P2 card is mandatory at the first time usage.
- When modified (copy, delete, move etc) folders in P2 Card, please format the card.
  (If you copy the folders/files from 5 slot P2 drive or PC PCMCIA to PC HDD, please format the card.)
- The format of 16G P2 card is available by Control Panel, 5 slot P2 drive and PC PCMCIA slot.
- Note that 16GB P2 card limit the number of files that can be recorded per below chart.

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<How to format 16GB P2 card by Control Panel?>
- Insert new 16GB P2 cards to P2 Recorder (VPU)
- By Control Panel Menu, go to “Setup/Info”, “Admin (page 2/2)”, “File Management” and select “Format”
- Press “Format” when “Format all P2 cards!!!” message is appeared.
  Then, you will see “All cards are formatted” message when the format is completed.
### 16GB P2 Card Format by Products / Combination with Windows version

<table>
<thead>
<tr>
<th>Format by</th>
<th>How to format?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI (FE Application)</td>
<td>By SI Menu, go to “Config”-”Operations”-”Format”.</td>
</tr>
<tr>
<td>Control Panel</td>
<td>By Control Panel Menu, go to “Setup Info”-”Admin”-”File Management”-”Format”</td>
</tr>
<tr>
<td>PC PCMCIA slot (Windows)</td>
<td>Select the removable disc drive in PC that inserted P2 card. Right click on that drive and select “format”</td>
</tr>
<tr>
<td>5 slot P2 Drive (AJ-PCD20P)</td>
<td>Select the removable disc drive in PC that inserted P2 card. Right click on that drive and select “format”</td>
</tr>
<tr>
<td>P2 Store (AJ-PCS060G)</td>
<td>Press “Format P2C” button on the unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Format by</th>
<th>Vista</th>
<th>XP Pro SP2</th>
<th>2000 Pro SP4 + Hot Fix</th>
<th>Server 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMCIA slot (Card Bus) in PC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 slot P2 Drive (AJ-PCD20P) through USB</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>5 slot P2 Drive (AJ-PCD20P) through IEEE1394</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>P2 Store (AJ-PCS060G) through USB</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

For the users who need Win2000 SP4+Hot Fix, please contact 1-800-LAPTOP5 (1-800-527-8675) to obtain the copy of the file.
Appendix
If the officer would like to see the REC status from inside of car additionally, it is possible to set up the LED light connecting to GPIO.

RadioShack Part# 276-041

Absolute Max Ratings
Forward Voltage: 3.0VDC max

Optoelectric Characteristics (at 10mA)
Forward Voltage: 2.6VDC
Luminous Intensity: 10mcd
Peak wavelength: 650nm

+ V (longer pin) - connect to GPIO (white color)
- V (shorter pin) - connect to GPIO ground cable (black color)
Siren Detector Cable (Option)

Siren Detector Cable for use with Panasonic Arbitrator

Special circuitry built within the cable will trigger the Arbitrator Mobile Digital Video System to turn on when police vehicle siren is initiated.

The Toughbook Arbitrator is the next-generation Mobile Digital Video System combining state-of-the-art digital recording, and data-compression technologies to achieve the world’s most advanced, reliable, and easiest-to-query incident documentation system from Panasonic.
Siren Detector Cable (Option)

Specification:
- Overall length is 40 inches - minimum, 18 awg
- Max Input Voltage  +/- 30V peak
  (Siren leads to Arbitrator RTN lead)
- Min input frequency: 400 Hz
- Max output voltage: 15 VDC
- Operating temp: 0°C to +65°C
  Storage temp: -40°C to +85°C

Contact Information:
LIND Electronics
www.lindelectronics.com
Toll Free 1-800-659-5956
G-Force Sensor (Option) Connection

Black (GND: -): Connect to the negative (-) terminal of the battery.

Red (BATT: +): Connect to a power supply that is constantly on, regardless of ignition key ON/OFF status.

Connect each cable to the VPU trigger cable to record by the trigger.
G-Force Sensor (Option) Trigger

If you have 5 trigger inputs available for VPU, connect Pin#1-5 with VPU trigger cable so that VPU can start recording by the impact from any 8 directions with indication on screen of SI and/or Control Panel.

If you have only 1 trigger input available for VPU, connect to Pin #6 to start recording by the trigger regardless of which direction the impact comes from.

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Description</th>
<th>Cable Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FLIP Out</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>RIGHT Out</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>LEFT Out</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>REAR Out</td>
<td>Red</td>
</tr>
<tr>
<td>5</td>
<td>FRONT Out</td>
<td>Brown</td>
</tr>
<tr>
<td>6</td>
<td>REC Out</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
<td>Yellow</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>Black</td>
</tr>
<tr>
<td>9</td>
<td>GND</td>
<td>Gray</td>
</tr>
</tbody>
</table>