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I. GAME PACKAGE CONTENTS

1 - Main Printed Circuit Board (PCB) Assembly
1 - PCB Shield (F.C.C. Compliance)
1 - Monitor Card
2 - Side Graphic Decals
1 - Marquee
*1 - SNK Wire Harness
*1 - Joystick Assembly Package Includes:
   2 - SNK Rotary Joysticks (Free Spin Unnotched Type)
   2 - Rotary Wire Harness Connectors
   1 - Knob Setting Tool
   6 - Control Buttons
      2 - Run Buttons (with metal switch plates)
      2 - Pass Buttons
      2 - 1 or 2 Player Start Buttons
*1 - Control Panel Overlay
*1 - Instruction Manual

* Cocktail Version Kit Contains Two Each.

Inspect the entire Contents of your game package to assure it is complete and in satisfactory condition. If any damages have occurred during shipment, please notify your SNK distributor immediately.
II. WARNINGS AND NOTICES

F.C.C. WARNINGS:

The PCB shield supplied with this game package must be utilized and terminated to ground at the time of installation of the PCB. This is required in order to comply with the limits for a class A computing device pursuant to subpart J of part 15 of F.C.C. rules. These rules are designed to provide reasonable protection against harmful interference to radio communications when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause RF interference in which case the user at his or her own expense will be required to take whatever measures necessary to correct the interference.
SNK recommends that the control panel be grounded and a grounded 3 wire outlet to be used for supplying power. These steps will assure a clear picture.

WARNING:

Do not attempt to troubleshoot or repair the PCM if it is found to be faulty or your warranty may be voided and repair charges will be more costly. Always contact an authorized SNK service technician to troubleshoot your PCB problems.

DO NOT SOLDER the control buttons or the rotary joysticks or they will malfunction and the warranty will be voided. SNK recommends the use of crimp lags only on all controls.

Whenever you change parts or insert/disconnect the edge connector, always check to make sure the power is off! After you are sure the power is off, wait approximately 10 seconds before proceeding to remove the edge connector to allow time for the power supply to discharge.

SNK recommends a 12 volt coin counter be connected to the +12 volt line only. Do not use a +6 volt coin counter. A +6 volt coin counter will cause a voltage drop on the +5 volt line which could cause the game to function improperly or cause possible IC damage.

Always use caution to stay clear of the high voltage sections to avoid the possibility of electric shock.

NOTICE:

Specifications and modifications may be changed without advance notice or warning.
III. REQUIREMENTS

A. MONITOR:

This game requires a Vertically Mounted Raster Scan type monitor with composite sync. If your monitor is one which requires separate synce, they may be found at the sync combination chip (IC #3F, 74LS86) on the BOTTOM PCB.

B. POWER SUPPLY:

SNK recommends the use of a switching type power supply with minimum current ratings as stated below:

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>+12 VDC</td>
<td>1 Amp</td>
</tr>
<tr>
<td>+ 5 VDC</td>
<td>8 Amps</td>
</tr>
<tr>
<td>- 5 VDC</td>
<td>1 Amp</td>
</tr>
<tr>
<td>Ground</td>
<td></td>
</tr>
</tbody>
</table>

C. PCB SPECIFICATIONS:

Operating Requirements
Voltage - +5.00 volts to 5.10 volts D.C., -5VDC, +12VDC.
Amperage - 7.5 amps
Power - 38.5 watts
Temperature - 0° - 30° C or 32° - 100° F
Humidity - 95% relative

The 5 volt supply draws about 7.5 amps on this PCB design and the power supply should be adjusted. When the voltage is correct, both LEDs will be lit. If only one LED is lit the 5 volt supply must be adjusted. Replace the power supply with one of a higher current rating if the voltage does not indicate 5 volts.
D. PCB LAYOUT

TOUCHDOWN FEVER
TOP PCB LAYOUT

36 Pin Connector
Cocktail Version
3 and 4 Player
Only

CN# 12 11 10 9
4 3 2 1
Player #

PCB
RODARY
Connectors

DIP 1 SWITCH
DIP 2 SWITCH

Proper Voltage
Indicating LEDs

Volume Control
VR1

PARTS SIDE

3 2 1

A6006
UP02-03

SNK

- 5 -
IV. INSTALLATION PROCEDURES

A. PLACEMENT OF PCB:

Before mounting PCB, make certain that the wire harness has sufficient “slack/play” between both joystick rotary connectors and the PCB connections. (See Page #5) Mount all four corners of the PCB to assure stability. Allow room for the PCB shield away from the power supply section. Before mounting please check wire harness layout.

B. WIRE HARNESS LAYOUT:

Mark it, PARTS SIDE in order not to reverse connection which may cause damage to the PCB and/or power supply. Layout your wire harness from one and two player control panel to the PCB edge connector to assure that it is long enough. Remember that the voltage of an intermediate wire harness decreases by contact resistance, so please CONNECT ALL OF THE WIRES PROVIDED FOR THE SUPPLY VOLTAGES AND GROUNDS in order to assure sufficient voltage and to avoid contact burning on the PCB.

C. CONTROL PANEL CONFIGURATION

![Diagram showing possible 1 and 2 player start control button locations]

POSSIBLE 1 AND 2 PLAYER START CONTROL BUTTON LOCATIONS

Control Button A is for RUN.
NOTE: DO NOT SOLDER CONTROLS
Control Button B is for PASS.

D. POWER UP CHECKLIST

1. Make sure that the Main Wire Harness is wired properly to the Power supply by measuring it with a volt meter.
2. Allow the Power Supply to discharge the voltage for about 10 seconds before connecting or disconnecting the edge connector.
3. Use crimp lugs on all CONTROLS and ROTARY JOYSTICKS and only solder other connections.
4. Ground all ground wires and the control panel.
5. Adjust the Power Supply and the Monitor.
6. Check all Controls and set the Dip Switches.
7. Secure the Main Wire Harness with wire ties.
HOW TO REMOVE KNOB OF JOYSTICK ASSEMBLY.

1. Insert "fingers" of joystick tool under knob. Make sure to align fingers with stitches on the knob. Push up to open top cap.
2. Use hex wrench to remove shaft nuts.

PARTS NO. | PARTS NAME
--- | ---
LS40-1 | Knob
A | Cap
B | Knut (M6)
C | Knob (Main Body)
D | Fastener
LS40-2 | Lever mask
LS40-3 | Main guide
LS40-4 | Micro Switch Plate
LS40-5 | Micro Switch
LS40-6 | 90 C-Clip
LS40-7 | Spacer (B)
LS40-8 | Spacer (A)
LS40-9 | Washer (small)
LS40-10 | Shaft Holder
LS40-11 | Shaft Holder Stand
LS40-12 | Washer (large)
LS40-13 | Spring
LS40-14 | 120 C-Clip
LS40-15 | Shaft
LS40-16 | Star Washer
LS40-17 | Rotary Switch Installation Plate (SUS)
LS40-18 | Rotary Switch
LS40-18H | Harness
LS40-19 | Rotary Switch Stopper
LS40-20 | Stand
LS40-21 | Steel Base
LS40-22 | Knob setting tool
LS40-24 | Complete Assembly
V. DISPLAY TEST MODE

A. SELF ROM CHECK

The memories are automatically self checked whenever power is applied. To enter the test mode, hold the test switch on when the power is turned on until PICTURE 0 is displayed. Press the test switch to continue the display tests or reapply power to start the game.

B. PICTURE 0 - CROSS HATCH

Adjust the monitor for a SQUARE PATTERN throughout the display and on the edge of the monitor.

C. PICTURE 1 - COLOR TEST

Assures that the correct colors are properly wired to the monitor.

D. PICTURE 2 - CONTROL TEST

As a lever or switch turns on, 0 on the monitor will change to 1. Turning the joystick dial clockwise increments the LEVER DIAL by one. Turning the joystick dial counter-clockwise decrements the LEVER DIAL by one. Insert coin and confirm that the COIN change from a 0 to 1. The service switch can also be checked here.
E. PICTURE 3 - BACKGROUND CHECK

Depress one player control buttons A or B to shift the Background Pattern.

F. PICTURE 4 - CHARACTER TEST

Confirm that the Characters are displayed on the monitor. There are 16 different colors of characters that will be displayed 0 thru F automatically.

G. PICTURE 5 - SOUND CHECK

Set up the sound Code ("?") to 40-7F, 80-BF or CO-FF by moving the joystick. The music, special effects or voice will activate when you press One Player Run Button. If you want to stop the sound, set the Code to OE and press the One Player Run Button.

SOUND

SOUND CODE = ?

MUSIC 40-7F
EFFECT 80-BF
VOICE CO-FF
STOP OE
VI. GAME OPERATION

A. HOW TO PLAY

The unnotched rotary joystick controls the movement of the player and the direction of the pass. Players can break free of tacklers by shaking the joystick when tackled.

Over 100 formations are programmed providing intense action for the player.

Players can kick extra points after a touchdown or try to pass/run for 2 point safety. Players may also attempt a field goal on a 4th down within the 10 yard line.

Upon defeating the computer, the player is awarded bonus time toward the next game played (kit version only). Bonus time is awarded for 1st downs and touchdowns.

Coin-up continue feature allows you to receive additional time by inserting extra coins and depressing the 1 or 2 player start buttons after initial start of game.

B. GAME STYLE

Touchdown Fever is offered as a 2 player cooperative vertical kit or a 4 player standup cocktail version.

This instruction manual provides technical information and dipswitch settings for both versions.

FIGURE 10

COCKTAIL VERSION

<table>
<thead>
<tr>
<th>DIP SWITCH 2</th>
<th>1p vs Comp</th>
<th>2p vs Comp</th>
<th>1p vs 2p</th>
<th>2p vs 1p</th>
<th>2p vs 2p</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF OFF OFF</td>
<td>1:00</td>
<td>1:10</td>
<td>2:00</td>
<td>2:10</td>
<td>3:00</td>
</tr>
<tr>
<td>ON OFF OFF</td>
<td>1:10</td>
<td>1:20</td>
<td>2:10</td>
<td>2:20</td>
<td>3:10</td>
</tr>
<tr>
<td>OFF ON OFF</td>
<td>1:20</td>
<td>1:30</td>
<td>2:20</td>
<td>2:30</td>
<td>3:20</td>
</tr>
<tr>
<td>ON ON OFF</td>
<td>1:30</td>
<td>1:40</td>
<td>2:30</td>
<td>2:40</td>
<td>3:30</td>
</tr>
<tr>
<td>OFF OFF ON</td>
<td>1:40</td>
<td>1:50</td>
<td>2:40</td>
<td>2:50</td>
<td>3:40</td>
</tr>
<tr>
<td>ON OFF ON</td>
<td>1:50</td>
<td>2:00</td>
<td>2:50</td>
<td>3:00</td>
<td>4:00</td>
</tr>
<tr>
<td>OFF ON ON</td>
<td>2:00</td>
<td>2:10</td>
<td>3:00</td>
<td>3:10</td>
<td>4:10</td>
</tr>
<tr>
<td>ON ON ON</td>
<td>2:10</td>
<td>2:20</td>
<td>3:10</td>
<td>3:20</td>
<td></td>
</tr>
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</table>
# VII. Optional Settings

## DIP SW No. 1

<table>
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<tr>
<th>Item</th>
<th>Specification</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Play</td>
<td>Continuous Play</td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Coin-Up Continue</td>
</tr>
<tr>
<td></td>
<td>No Continuous Play</td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Style</td>
<td>Upright</td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Table</td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonus Time For First Downs</td>
<td>Every 8 1st Downs</td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 6 1st Downs</td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 4 1st Downs</td>
<td><strong>OFF</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Every 1st Down</td>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coin 1</td>
<td>1 Coin 1 Play</td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Coin 1 Play</td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Coin 1 Play</td>
<td><strong>OFF</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Coin 1 Play</td>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
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</table>

## DIP SW No. 2

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<th>Specification</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td>Level of Difficulty</td>
<td>Easy</td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Level 1</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td><strong>ON</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Level 2</td>
</tr>
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<td></td>
<td>Hard</td>
<td><strong>OFF</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Level 3</td>
</tr>
<tr>
<td></td>
<td>Difficult</td>
<td><strong>ON</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Level 4</td>
</tr>
<tr>
<td>Attraction Sound</td>
<td>Without Sound</td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Demo Sound Off</td>
</tr>
<tr>
<td></td>
<td>With Attraction Sound</td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Demo Sound On</td>
</tr>
<tr>
<td>Mode</td>
<td>Never Finish Game Play</td>
<td><strong>OFF</strong></td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Continuous Play</td>
</tr>
<tr>
<td></td>
<td>Stop Video Display</td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Playing Time</td>
<td>See Figure 10</td>
<td>std. setting</td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
<td><strong>OFF</strong></td>
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<td></td>
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<tr>
<td>Display</td>
<td>Normal Picture</td>
<td><strong>OFF</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Inverse Picture</td>
<td><strong>ON</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note:** Bold face suggests factory recommended settings.
# IX. MAIN HARNESS CONNECTIONS

## CONNECTOR CR7E - 56 DA - 3.96 E (HIROSE)

<table>
<thead>
<tr>
<th>WIRE COLOR</th>
<th>SOLDER SIDE</th>
<th>PIN NAME PIN #</th>
<th>PARTS SIDE</th>
<th>WIRE COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK</td>
<td>Ground</td>
<td>A 1</td>
<td>Ground</td>
<td>Black</td>
</tr>
<tr>
<td>BLACK</td>
<td>Ground</td>
<td>B 2</td>
<td>Ground</td>
<td>Black</td>
</tr>
<tr>
<td>RED</td>
<td>+5VDC</td>
<td>C 3</td>
<td>+5VDC</td>
<td>RED</td>
</tr>
<tr>
<td>RED</td>
<td>+5VDC</td>
<td>D 4</td>
<td>+5VDC</td>
<td>RED</td>
</tr>
<tr>
<td>GREEN</td>
<td>-5VDC</td>
<td>E 5</td>
<td>-5VDC</td>
<td>GREEN</td>
</tr>
<tr>
<td>YELLOW</td>
<td>+12VDC</td>
<td>F 6</td>
<td>+12VDC</td>
<td>YELLOW</td>
</tr>
<tr>
<td>KEY</td>
<td></td>
<td>H 7</td>
<td>KEY</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>J 8</td>
<td>Coin Counter 1</td>
<td>BROWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>K 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHITE</td>
<td>Left Speaker -</td>
<td>L 10</td>
<td>Right Speaker +</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M 11</td>
<td></td>
<td></td>
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<tr>
<td>GREEN</td>
<td>Video Green</td>
<td>N 12</td>
<td>Video Red</td>
<td>PINK</td>
</tr>
<tr>
<td>GRAY/WHITE</td>
<td>Video Sync</td>
<td>P 13</td>
<td>Video Blue</td>
<td>LIGHT BLUE</td>
</tr>
<tr>
<td>VIOLET</td>
<td>Service Switch</td>
<td>R 14</td>
<td>Video Ground</td>
<td>BLACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S 15</td>
<td>Test Switch</td>
<td>ORANGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T 16</td>
<td>Coin Switch 1</td>
<td>VIOLET/WHITE</td>
</tr>
<tr>
<td>WHITE/BLACK</td>
<td>Start Option B</td>
<td>U 17</td>
<td>Start Option A</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>BROWN/BLACK</td>
<td>2P Control 1 UP</td>
<td>V 18</td>
<td>1P Control 1 UP</td>
<td>WHITE/BROWN</td>
</tr>
<tr>
<td>RED/BLACK</td>
<td>2P Control 2 DOWN</td>
<td>W 19</td>
<td>1P Control 2 DOWN</td>
<td>WHITE/RED</td>
</tr>
<tr>
<td>ORANGE/BLACK</td>
<td>2P Control 3 RIGHT</td>
<td>X 20</td>
<td>1P Control 3 RIGHT</td>
<td>WHITE/orange</td>
</tr>
<tr>
<td>YELLOW/BLACK</td>
<td>2P Control 4 LEFT</td>
<td>Y 21</td>
<td>1P Control 4 LEFT</td>
<td>WHITE/YELLOW</td>
</tr>
<tr>
<td>GREEN/BLACK</td>
<td>2P Control 5 PUSH 1</td>
<td>Z 22</td>
<td>1P Control 5 PUSH 1</td>
<td>WHITE/GREEN</td>
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<tr>
<td>BLUE/BLACK</td>
<td>2P Control 6 PUSH 2</td>
<td>a 23</td>
<td>1P Control 6 PUSH 2</td>
<td>WHITE/BLUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>c 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>d 26</td>
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<td></td>
</tr>
<tr>
<td>BLACK</td>
<td>Ground</td>
<td>e 27</td>
<td>Ground</td>
<td>BLACK</td>
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<tr>
<td>BLACK</td>
<td>Ground</td>
<td>f 28</td>
<td>Ground</td>
<td>BLACK</td>
</tr>
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</table>
**X. COCKTAIL VERSION (4 PLAYER)**

Cocktail version uses 5 start option control buttons.

### 36 Pin

<table>
<thead>
<tr>
<th>SOLDER SIDE</th>
<th>PIN #</th>
<th>PARTS SIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

- Start Option D: H 7 Start Option C
- 4P UP: J 8 3P UP
- 4P DOWN: K 9 3P DOWN
- 4P LEFT: L 9 3P LEFT
- 4P RIGHT: M 10 3P RIGHT
- 4P PUSH 1: N 12 3P PUSH 1
- 4P PUSH 2: P 13 3P PUSH 2
- R 14
- S 15 Start Option E
- GND T 16 GND
- GND U 17 GND
- GND V 18 GND

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