

# The Ultimate MPU Test Card



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Version 4



## Getting Started

Thanks for purchasing The Ultimate MPU Test Card. The following instructions will help you to test your pinball machine much faster than before. The firmware is based on the original Stern® enhanced diagnostics test program. If at any time you are unsure of how to proceed or have a question, STOP. We offer phone support at (757) 546-0742 or e-mail at [mpusupport@allteksystems.com](mailto:mpusupport@allteksystems.com) with an ever improving technical support page on our website at [www.allteksystems.com](http://www.allteksystems.com). The first step is to install your Ultimate MPU Board. Use the manual that you received with your board purchase to help you setup your Ultimate MPU board properly. From this step forward we will assume you have the Ultimate MPU Board installed.

## Setup

Take a look at your new test card. You will notice that it is divided into 3 sections as follows:

- Display Test – Test Number 1
- Lamp Test – Test Number 2
- Solenoid Test – Test Number 3

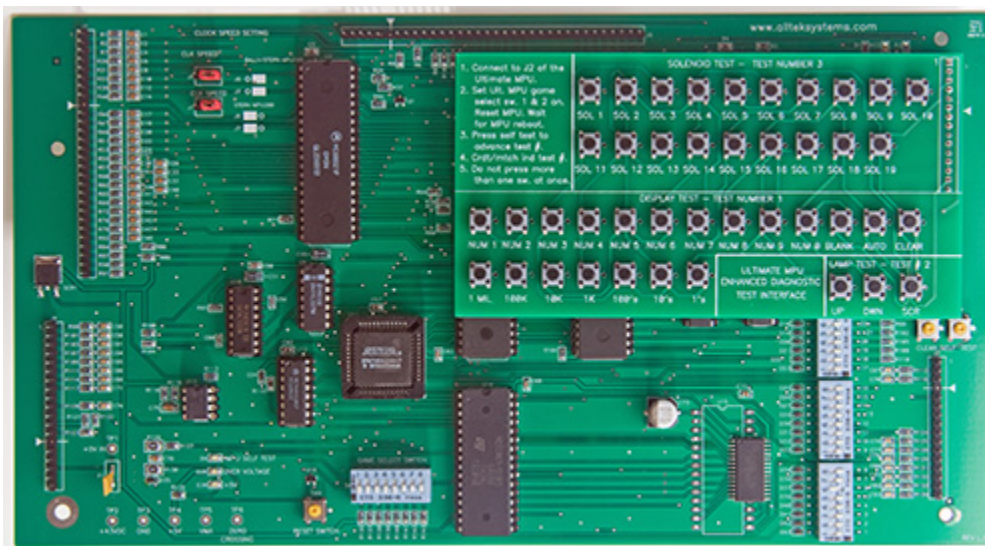


Fig. 1 Test card piggybacked on to the Ultimate MPU Board

To setup your game for testing first make sure that the machine is turned off. Unplug the J2 connector that is presently plugged into the Ultimate MPU Board.

Position the Ultimate Test Card so that it piggybacks the J2 connector and it covers up the right top corner of the Ultimate MPU Board as shown in figure 1.

Locate the Game Select dipswitch as shown in figure 2. Turn on the 2 left most switches by placing them in the up position. This will place your game in Enhanced Diagnostics Mode. You can leave the other switches as they are.

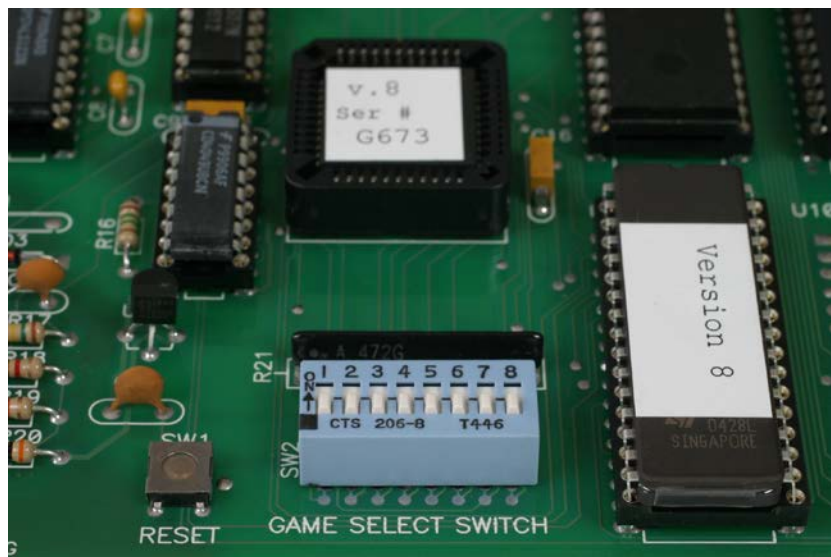
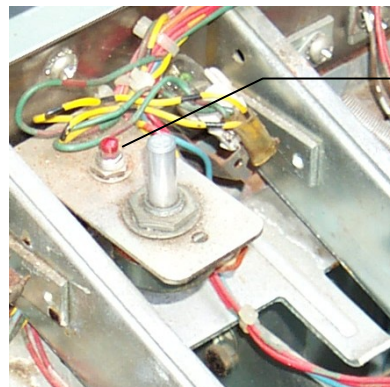


Fig. 2 Game Select Switch

## ***Test Procedures***

It's now time to turn the machine. When your machine comes up you will notice the following conditions, a 0 will come up in the Credit/Match position window along with flashing 0's in players 1 through 4. Locate the test button on the front door of the game. Push and release the Self-Test button once to place the machine in Display Test Mode. You should have a 1 in the Credit/Match display window.



Red  
Self-Test  
Button

## **Display Test Mode – Test # 1**

With this test you can place any number in any position on the displays. First press the desired number you want displayed (Num1 – Blank). Then press the desired position that you want to see the number placed in on the display (1 Mil – 1's). To clear the displays press the clear button. *Note: Your displays must have 7 digits to use the 1 Mil button.*

You will notice that the desired number is now placed in the desired position. If you want to just cycle the displays, press the auto button. To stop the auto placement and go back to manual mode press the auto button again.

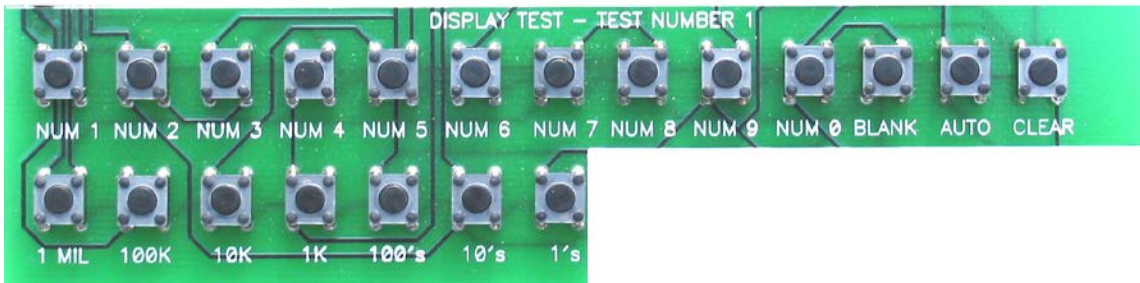


Fig. 3 Display Test Button Area

## **Lamp Test Mode – Test #2**

Push and release the self-test button once more to place the machine into Lamp Test Mode. You should have a 2 in the Credit/Match display window. The game will now start to cycle through each column of lamps and then each row of lamps. At any time you can press the SCR button to place the game into single lamp mode. This mode will allow you to check out individual lamps that might not be working. Using the up and down buttons, you will notice that the SCR lamp number will be displayed in the Credit/Match. Using your manual, select the SCR lamp driver number that you want to test. At any time you can press the SCR button again to cycle through columns and rows.



Fig. 4 Lamp Test Button Area

### ***Solenoid Test Mode – Test #3***

Push and release the test button once more to place the machine into Solenoid Test Mode. You should have a 3 in the Credit/Match display window. In this test mode press the solenoid test button to activate the associated solenoid. This will fire the solenoid transistor 4 times.

Don't forget that the game will not typically use all of the solenoids. Also if your game uses an expander relay circuit, you will not be able to check any of the solenoids that are associated with that circuit.



Fig. 5 Solenoid Test Button Area

### ***Burn-in Test Mode – Test #5***

Push and release the test button **twice** to place the machine into Burn in Test Mode. You should have a 5 in the Credit/Match display window. You don't want to press any buttons on your Ultimate Test Card in this test. Your machine will start to cycle all of its game functions until you press the test button on the front door, which will start the entire test process again.

### ***Completing the Test Procedure***

Turn off your game. Remove the Ultimate Test Card. Plug the game connector back into the J2 connector. Make the Game Select dipswitch as it was before. Your game is ready for normal game operations.