

INSTALLATION AND SERVICE MANUAL

FOR

**TAG TEAM WRESTLING, KARATE CHAMP PLAYER vs PLAYER, KUNG FU MASTER,
COMMANDO, AND SHOOTOUT**

PCB CONVERSION KITS

BY

DATA EAST USA, INC.

I N S T A L L A T I O N A N D S E R V I C E M A N U A L
F O R
D A T A E A S T C O N V E R S I O N K I T S

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c. General conversion requirements

This Data East conversion kit is designed to be installed into an existing video game cabinet. All necessary components and graphics have been supplied to make the results of this conversion look and play like a new upright game. There are several requirements to consider when selecting a game to convert. They are as follows:

COLOR MONITOR:

VERTICAL	HORIZONTAL
TAG TEAM WRESTLING	KUNG FU MASTER
KARATE CHAMP	SHOOTOUT
COMMANDO	

POWER SUPPLY:

- + 5 VOLTS AT A MINIMUM OF 7 AMPERES
- + 12 VOLTS AT A MINIMUM OF 1 AMPERE
- 5 VOLTS AT A MINIMUM OF .5 AMPERE

When selecting a game to convert, make sure that the coin acceptors are functional, the monitor and power supply work well, and the cabinet is structurally sound. There is nothing more frustrating than installing a new conversion kit and discovering that it will not come up due to a faulty monitor or power supply. I know...the first thing we will suspect is the new Logic PCB, right? Save yourself some time and money by making sure the original game works before you install the conversion kit.

It is mandatory that the cabinet be wired to conform with all National and Local Electrical Code requirements before the conversion is attempted. The system must have adequate noise filtering on the AC line to prevent unwanted conducted radio frequency interference. "Adequate" is defined as a filter having both common mode and differential mode filtering with a current capacity of at least 1 1/2 amperes.

According to the FCC and/or other regulatory agencies, every video game must be clearly labeled with the name and address of the Original Manufacturer, Date of Manufacture (or serial number), Voltage Rating, Current Rating, Suitability for indoor or outdoor use, and Model Number. In addition, the FCC requires that after conversion, the unit must be labeled with a suitable warning stating that radio frequency interference may result from use in a residential area. An acceptable warning sticker is included in your kit.

IT IS THE RESPONSIBILITY OF THE PERSON PERFORMING THE CONVERSION TO COMPLY WITH ALL LABELING REQUIREMENTS.

d. Conversion preparations

Performing a few simple tasks when preparing a game to be converted can save you much time and effort when you are installing the conversion kit. This section will cover the basic procedures to follow when preparing your game.

FIND THE WIRING DIAGRAM FOR THE GAME TO BE CONVERTED! You will need to identify the required DC power supply output wires, and the monitor video and sync wires. Note the color coding of these wires or better yet, label each one as to their function. This conversion kit contains a new Main Harness, but you may need to splice into the existing power supply and monitor wires.

Remove the existing game harnesses that will not be utilized in the final conversion. **NOTE:** This conversion kit only requires modification of the secondary (DC from power supply) and I/O (control panel and coin) sections of the original wiring. **DO NOT REMOVE OR MODIFY THE PRIMARY AC WIRING.** The primary AC wiring should have been designed and built to UL and FCC regulations and must not be modified.

Remove the existing game logic boards. Remove all decals and/or paint over existing cabinet graphics. Repair any cabinet damage at this time.

Remove the monitor plex (or glass). If your plex has silkscreened artwork on it, you will need to strip it off or replace with a clear plex cut to the same size. Use your original plex as a template when cutting the new Underlay Card down to size.

Remove the marquee plex. Use this plex as a template when cutting the new Marquee plex down to size.

Remove the control panel from the cabinet and strip it down. The game is now ready to be converted!

e. Installation procedures

Control Panel: This is never any fun, so lets do it first and get it out of the way. Examine the suggested control panel layout drawing (refer to Chapter 2, Specific Information) and see what holes you will have to add and/or plug.

Install the control panel overlay by peeling off the paper backing and carefully lowering it down on to the panel. Smooth it out starting from the center and work your way out to the edges, removing all of the trapped air pockets. Using a sharp blade, cut out all of the required holes and mount the controls as shown in the layout drawing. Mount the completed control panel to the cabinet.

PCB Set: Mount the new pcb set into the cabinet. We recommend mounting these to a side wall to allow for adequate convection cooling. This pcb set does not require an EMI cage, but use of the EMI Filter pcb is MANDATORY! Tag Team does not have a EMI Filter pcb, nor does it require one.

Main Harness: Plug the Main Harness onto the edge connector of the EMI Filter pcb and route the power supply wires neatly to the power supply. For best results, these wires should be routed in such a way as to keep the overall length to a minimum. Use a minimum of two (2) wires EACH for the +5 volt and Ground wires from the Power Supply to the pcb set. The +12 volt wire is not critical, one (1) wire is adequate. Terminate these wires as required by your particular application.

WARNING: IMPROPER WIRING WILL CAUSE SUBSTANTIAL DAMAGE TO THE PCB SET AND VOID YOUR WARRANTY!

Route the remaining wires to their proper destinations, cut to the proper length, and terminate as required. See Specific Wiring Information for hook up details.

NOTE: As mentioned in the Conversion Requirements, this pcb set outputs NEGATIVE COMPOSITE SYNC to the monitor. If your monitor does not support Composite Sync, hook the Sync wire to the - Horizontal Sync input. This method will work on most monitors, however, some Electrohome models require that Sync be tied to both the - Horizontal and - Vertical inputs for proper operation. Contact your distributor if you are uncertain as to the proper hook up procedures for your monitor.

b. Installation procedures (continued)

The Coin Counter(s) can be 5 volt or 12 volt units as the pcb set utilizes an Open Collector output driver circuit. See Specific Wiring Information for hook up details.

Graphics: Install the Underlay Card. This card will rest directly under the clear monitor plex (or glass). Mount the new Marquee Plex in place at this time. Apply the side decals, being careful to remove all air pockets.
MANDATORY: Install the FCC warning label to the back of the cabinet to complete the installation procedures!

The Big Test: Before applying power to the game, go back and verify that the wiring is correct. **DISCONNECT THE PCB EDGE CONNECTOR NOW!** With the pcb edge connector disconnected, apply power and **MEASURE WITH A DIGITAL MULTIMETER** the +5 volt level in respect to ground **AT THE EDGE CONNECTOR**. Refer to the edge connector pin-out in Section 2, Specific Information. Adjust the power supply to get a 5.1 volt reading at this point. Check the +12 volt level and the -5 volt (if required) level in the same manner. **REMOVE POWER FROM THE GAME AND ALLOW 1 MINUTE FOR THE POWER SUPPLY TO DISCHARGE.**

Reinstall the pcb edge connector and apply power to the game. The game's attract mode video should appear on the screen. Examine the video for correct appearance. Adjust the controls on the monitor to get the optimum picture as required.

Well, coin it up and play it! Check for proper controls, video sound.