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## OPERATION & SERVICE MANUAL

UPRIGHT MODEL: 1US34

©1988 DATA EAST USA, INC.

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## **FCC WARNING**

This equipment generates and uses radio frequency energy and if not installed and used properly, ie., in strict accordance with this instructions manual, may cause harmful interference to radio communications. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment.

Operation of this equipment in a residential environment is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

## **FBI WARNING**

Federal law provides severe civil and criminal penalties for the unauthorized reproduction, distribution, or exhibition of copyrighted audiovisual works and video games. The Federal Bureau of Investigation investigates allegations of criminal copyright infringement.

## **COPYRIGHT NOTICE**

The Bad Dudes™ video game is © copyright 1988 Data East USA, Inc. All rights reserved.

## **ENVIRONMENTAL DATA**

This product is intended for indoor use only, power requirements are 105-125 volts AC 50-60 hz, and requires a 3 wire grounded outlet.

## **REPLACEMENT PARTS AND SERVICE**

To obtain replacement parts or technical assistance, contact the authorized Data East distributor in your area. If you require referral or further technical assistance, you may contact Data East's Customer Service department during the hours of 8:00 am to 5:00 pm Pacific Time at (408) 286-7074.

## **AAMA WARNING**

DATA EAST USA, INC., in cooperation with the American Amusement Machine Association, has installed an "AAMA PROTECT" certification label on each Bad Dudes™ PCB manufactured for legal sale in the United States of America.

If you are offered a Bad Dudes™ PCB that does not have the "AAMA PROTECT" certification label, you should suspect that the board is not legal, and should contact DATA EAST USA, INC., at (408) 286-7074, or Bob Fay of the AAMA at (703) 548-8044.

**BAD DUDES™**  
**OPERATION & SERVICE MANUAL**  
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# **1. GENERAL INFORMATION**

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## **a. Installation and Set-Up.**

Locate the door keys supplied and remove the Rear Access Door.

Check the Main Harness for loose or unplugged connectors, and check for secure mounting of the monitor, power supply, and game pcb. Stabilize the cabinet using the leg levelers in the floor of the cabinet to prevent the game from rocking.

The selectable options have been pre-set at the factory for optimum player appeal, however, refer to Chapter 2, Section C; Dip Switch Options in this manual to set the game up for special requirements.

Remove the power cord from the inside of the cabinet and insert the strain relief plate into the slot at the bottom of the rear access door opening. Plug the AC cord into a grounded 117 VAC outlet and flip the power switch to the ON position. Allow 2 to 3 minutes for the monitor to warm up and check for proper demonstration mode video on the screen. Insert the proper coinage into a coin slot and start a game. Check for proper operation of all joystick controls and switches.

## **b. System Information.**

The Bad Dudes™ game features Data East's new and innovative HFT SYSTEM™ hardware. This system consists of a DE-0295 Main CPU pcb and a DE-0293 Game Program pcb. The Main CPU pcb utilizes a Motorola 68000 32 bit Microprocessor to control the game functions, and a 65C02A Microprocessor to control the Yamaha Sound Generator circuit. The Game Program pcb contains all game specific program devices, and an OKI Voice generator circuit.

The Volume Control, Coin Counter, and Service Switch are located on the **Service Panel**. The Service Panel is located inside the Coin Door, mounted on the wall of the cabinet on the left side.

The **Coin Counter** increments once for every coin dropped through either coin entry slot.

The **Volume Control** is used to adjust the overall loudness of the game sounds. NOTE: The volume control potentiometer on the Main pcb is pre-set to mid-range at the factory and should not be adjusted.

The **Service Switch** can be used to add credits to the game without incrementing the Coin Counter.

The **Fuses** for the AC power line and the 12 volts for the Coin Door lamps are located on the Power Supply assembly. The fuse holders are labeled as to the proper fuse ratings.

The +5 vdc adjustment on the Power Supply's Switching Regulator is pre-set at the factory. In the event that an adjustment is required, measure the +5 volt level present at the game logic pcb with a Digital Volt-Meter (DVM) while adjusting the output level of the Switching Regulator. **The voltage must measure between +4.90 vdc to 5.10 vdc at the game logic pcb for proper operation.**

**WARNING: DANGEROUS VOLTAGE LEVELS ARE PRESENT IN AND AROUND THE MONITOR AND POWER SUPPLY ASSEMBLY. ADJUSTMENTS AND REPAIRS SHOULD BE ATTEMPTED ONLY BY QUALIFIED ELECTRONIC TECHNICIANS.**

Complete the Customer Reply Card in the rear of this manual to receive your copy of the HFT SYSTEM™ Technical Support Manual. Please include any comments or suggestions you have regarding Data East's products or services.

## **2. GAME INFORMATION**

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### **a. Game Play Information.**

The Bad Dudes™ game is a one or two player interactive coin-operated video amusement machine. Each set of player controls consist of a 8-way joystick, an "Attack" pushbutton, and a "Jump" pushbutton. Each player also has an individual "Start" pushbutton. The combination of joystick position, button combination, and distance to the enemy control which attack move the player image will perform. The combination of Joystick and Jump button movement allows the player image to change from one level to another, or jump over and avoid an enemy.

### **b. Control Panel Test.**

Activating the Control Panel Test Mode (Dipswitch 1, switch 5 = ON) will cause the game to enter a switch test pattern upon power up. This pattern displays all of the input control's status. Switches that are not active (OFF) are indicated with a "0", while active (ON) switches are shown with a "1". NOTE: Not all of the switch inputs are used in this game.

Move switch 5 of Dipswitch 1 to the off position to return to the game mode.

### **c. Operator Selectable Options.**

The Operator Selectable Options can be altered via two banks of Dipswitches on the Main CPU pcb. The tables on the following page indicate the options available. Remove power to the game when changing the settings of these switches.

## DIPSWITCH 1

ITEM	ACTION	1	2	3	4	5	6	7	8	
COIN	1 COIN = 2 CREDIT:	OFF	OFF	NOTE: THE COIN 1 INPUT IS NOT USED. BOTH COIN						
VS	1 COIN = 3 CREDIT:	ON	OFF	SWITCHES ARE WIRED TO THE COIN 2 INPUT.						
CREDIT	1 COIN = 4 CREDIT:	OFF	ON							
COIN 1	1 COIN = 6 CREDIT:	ON	ON							
COIN	1 COIN = 1 CREDIT:			OFF	OFF					
VS	2 COIN = 1 CREDIT:			ON	OFF					
CREDIT	3 COIN = 1 CREDIT:			OFF	ON					
COIN 2	4 COIN = 1 CREDIT:			ON	ON					
CONTROL PANEL	NO:						OFF			
TEST MODE	YES:						ON			
DEMO MODE SOUND	YES:						OFF			
	NO:						ON			
SCREEN	NORMAL:							OFF		
DISPLAY	FLIP:							ON		
DON'T CHANGE								OFF		

## DIPSWITCH 2

ITEM	ACTION	1	2	3	4	5	6	7	8	
NUMBER	THREE (3):	OFF	OFF							
OF	FIVE (5):	ON	OFF							
LIVES	ONE (1):	OFF	ON							
	INFINITE:	ON	ON							
GAME	NORMAL:			OFF	OFF					
DIFFICULTY	EASY:			ON	OFF					
	HARD:			OFF	ON					
	HARDEST:			ON	ON					
CONTINUE MODE	NO:						OFF			
(BUY-IN)	YES						ON			
DON'T CHANGE								OFF	OFF	OFF



### 3. REPLACEMENT PARTS LIST

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#### FINAL ASSEMBLY

CABINET, EMPTY, 1US34 STYLE, GREY .....	365-0013-00
CONTROL PANEL ASSY., BAD DUDES .....	510-0135-00
COIN DOOR ASSY., COIN CONTROL.....	510-0004-00
MONITOR ASSY., 19" WELLS-GARDNER .....	510-0065-00
POWER SUPPLY ASSY., 11AMP.....	510-0002-01
PCB SET, BAD DUDES .....	510-0132-00
PLEX, CLEAR, DISPLAY 23.75 X 23.75 .....	660-0001-01
UNDERLAY CARD, BAD DUDES.....	810-0030-00
DECAL, SIDE, GENERIC.....	820-0040-00
PLEX, MARQUEE, 26 1/16", BAD DUDES .....	830-0038-01
RETAINER, PLEX, MARQUEE .....	535-0078-00
SPEAKER, 5" DELUXE .....	031-0005-00
HARNES, MAIN, JAMMA STD. 2P U/R .....	036-0159-02

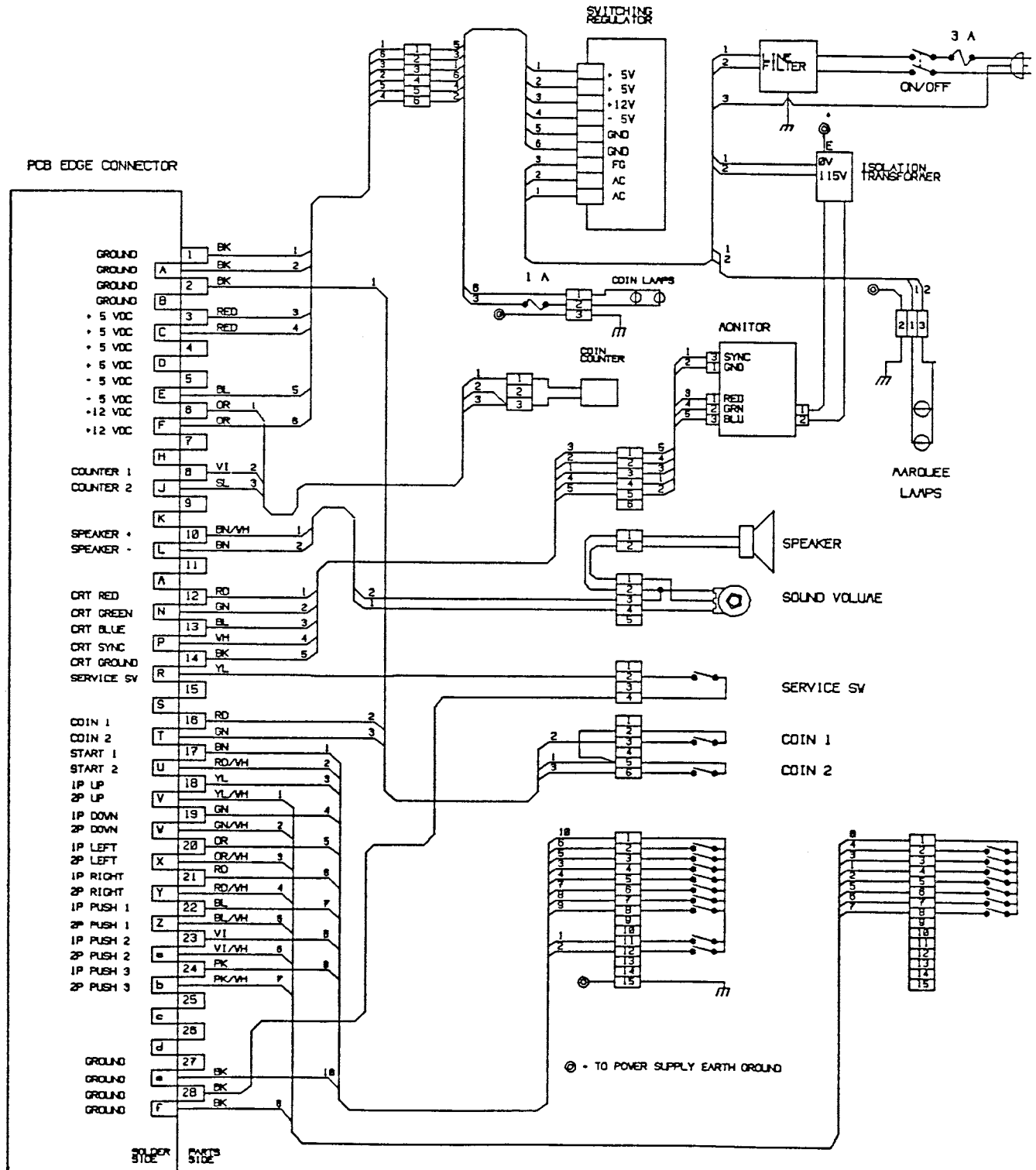
#### CONTROL PANEL

CONTROL PANEL, BARE .....	535-0061-00
OVERLAY, CTRL PNL, GENERIC .....	800-0030-00
PUSHBUTTON, RED (ATTACK) .....	350-0001-02
PUSHBUTTON, YELLOW (START) .....	350-0001-04
PUSHBUTTON, SHORT, BLACK (JUMP) .....	350-0001-00
PUSHBUTTON HOLDER W/SWITCH.....	185-0001-00
PAL NUT, NYLON .....	240-0001-01
HARNES, CTRL PNL, 1P/2P, 2S.....	036-0115-01
HARNES, CTRL PNL, 2S, NO SEL.....	036-0115-02
JOYSTICK, 8-WAY, CI.....	450-0003-00

#### MISCELLANEOUS PARTS

REGULATOR, 5V @ 11 A & 12V @ 1 A.....	001-0012-00
ISOLATION TRANSFORMER.....	010-0001-00
AC LINE FILTER .....	150-0004-00
CASHBOX, PLASTIC.....	545-0004-00
FIXTURE, LAMP, DUAL.....	170-0002-00
LAMP, 40 WATT, INCANDESCENT .....	165-0004-01
COIN LAMP, 14 VDC .19 AMP WEDGE, #161 .....	165-0009-00
SERVICE PANEL ASSY.....	515-0029-00
COIN COUNTER, 12 VOLT .....	090-0002-00
POT, 100 4W 1/4" SHAFT.....	123-0008-11
SERVICE PUSHBUTTON, SHORT, ANY COLOR.....	350-0001-0X

# 4. WIRING DIAGRAM



JAMA STANDARD CONNECTOR

# CUSTOMER REPLY CARD

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To receive your copy of the HFT System™ Technical Support manual (including schematic diagrams), complete and return the coupon below. please include the Serial Number of the cabinet (or pcb in the case of a conversion kit). Indicate if you would like your firm to be added to Data East's direct mail list to receive service bulletins and related literature.

Data East welcomes your feedback, please include any comments regarding our product or services in the section below. Return the coupon to:

**Data East USA, Inc.**  
470 Needles Drive  
San Jose, CA. 95112

ATTN: Coin-Op Customer Service Dept.

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## HFT SYSTEM™ TECHNICAL SUPPORT MANUAL REQUEST FORM

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

YOUR NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

GAME NAME: \_\_\_\_\_ MODEL NUMBER: \_\_\_\_\_

CABINET SERIAL NUMBER: \_\_\_\_\_ PCB SERIAL NUMBER: \_\_\_\_\_

ADD YOUR COMPANY TO THE DIRECT MAIL LIST?      YES       NO

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# Warranty Information

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Data East USA, Inc., ("Seller"), warrants only to the initial purchaser ("Buyer") of its products that the items listed below are free from defects in material and workmanship under normal use and service for the period specified:

- GAME LOGIC PRINTED CIRCUIT BOARD(S) 90 DAYS
- SWITCHING REGULATOR(S) 30 DAYS
- MONITOR PRINTED CIRCUIT BOARD(S) 30 DAYS

No other parts of Seller's products are warranted.

Warranty periods are effective from initial date of shipment from Seller to Buyer. Seller's sole liability shall be, at its option, to repair or replace products which are returned to Seller during the warranty periods specified, provided:

- SELLER IS NOTIFIED PROMPTLY UPON DISCOVERY BY BUYER THAT STATED PRODUCTS ARE DEFECTIVE.
- SUCH PRODUCTS ARE PROPERLY PACKAGED AND THEN RETURNED FREIGHT PRE-PAID, TO SELLER'S PLANT.

This warranty does not apply to any parts damaged during shipment and/or due to improper handling, or due to improper installation or usage, or alteration. In no event shall the Seller be liable for any anticipated profits, loss of profits, loss of use, accidental or consequential damages, or any other losses incurred by the customer in connection with the purchase of a Data East USA, Inc., product.

## WARRANTY DISCLAIMER

**EXCEPT AS SPECIFICALLY PROVIDED IN A WRITTEN CONTRACT BETWEEN SELLER AND PURCHASER, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

