



A Product of Everbrite 401 S. Main St. Pardeeville, WI 53901 (608)429-2121 / (800)356-8146

OPERATING INSTRUCTIONS AND SERVICE MANUAL

BASKETBALL SCOREBOARD

MODEL MP-5254R With MP-5000 Control

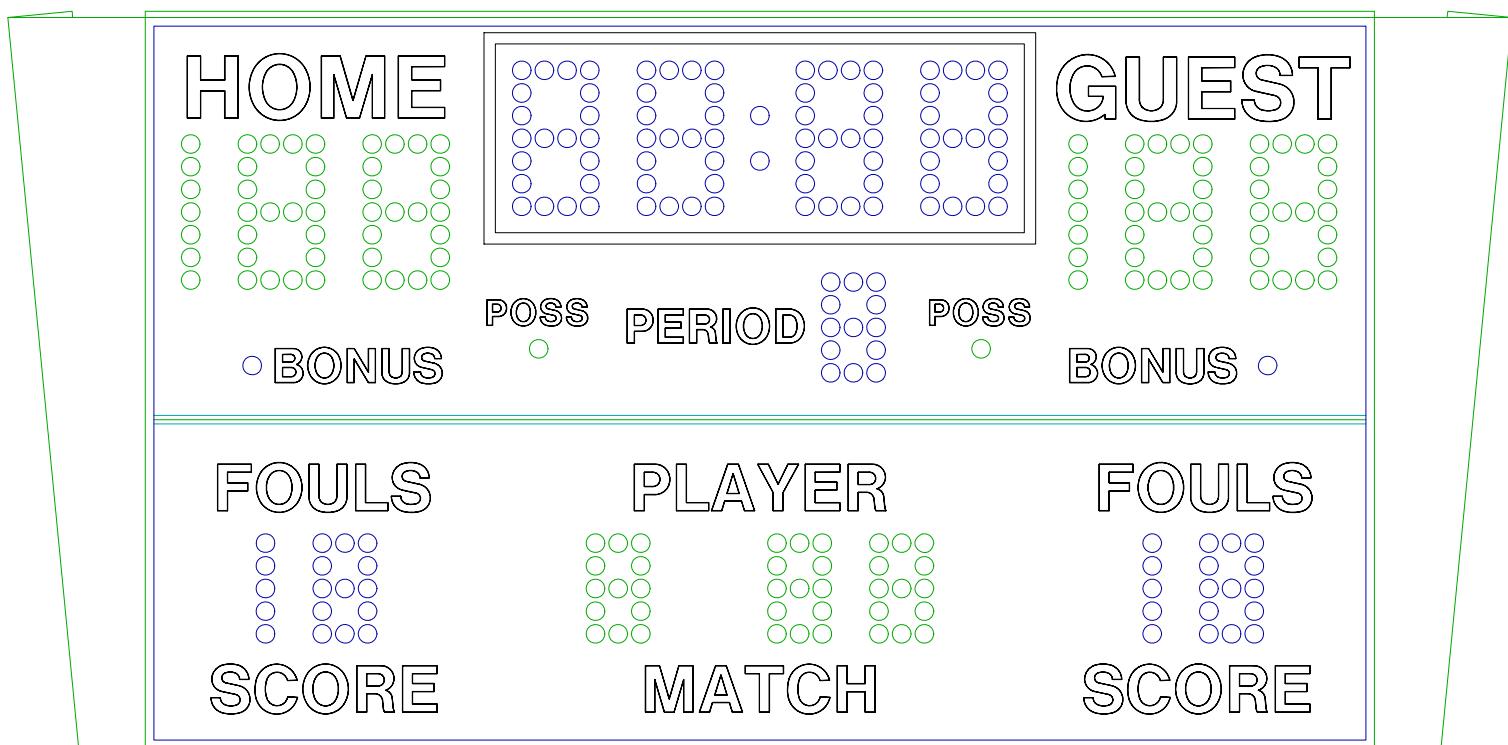


TABLE OF CONTENTS

1. GENERAL INFORMATION

- 1.1 DESCRIPTION
- 1.2 IDENTIFICATION
- 1.3 DAMAGE
- 1.4 DAMAGE CLAIM PROCEDURE

2. INSTALLATION

- 2.1 GENERAL INFORMATION
- 2.2 INSPECTION
- 2.3 PRE-TEST
- 2.4 ELECTRICAL CONNECTIONS

3. CONTROL CONSOLE OPERATION

- 3.1 SCOREBOARD POWER
- 3.2 CONSOLE DISPLAY
- 3.3 CONSOLE POWER
- 3.4 TO USE SCOREBOARD
- 3.5 TIME OF DAY OPERATION
- 3.6 TIME SETTING AND CONTROL
- 3.7 FINAL MINUTE 1/10 SECOND TIME OPTION
- 3.8 TEAM SCORES
- 3.9 HORN
- 3.10 BONUS INDICATOR
- 3.11 PERIOD INDICATORS
- 3.12 TIMEOUT PERIOD
- 3.13 BALL POSSESSION INDICATOR
- 3.14 TIME OUTS LEFT
- 3.15 TEAM FOULS
- 3.16 PLAYER NUMBER AND PLAYER FOULS
- 3.17 WRESTLING OPERATION
- 3.18 VOLLEYBALL OPERATION

4. MAINTENANCE AND TROUBLESHOOTING

- 4.1 INTRODUCTION
- 4.2 TEST EQUIPMENT
- 4.3 TROUBLESHOOTING
- 4.4 TROUBLESHOOTING GUIDE

5. REPLACEMENT PARTS LIST

- 5.1 SCOREBOARD DISPLAY PARTS
- 5.2 CONTROLLER ASSEMBLY PARTS
- 5.3 POWER SUPPLY ASSEMBLY PARTS

6. DIAGRAMS

- 6.1 CONTROL CONSOLE KEYBOARD AND SLIPSHEET LAYOUT
- 6.2 SCOREBOARD SYSTEM LAYOUT
- 6.3 CONTROLLER ASSEMBLY WIRING
- 6.4 POWER SUPPLY DIAGRAM
- 6.5 RECEIVER BOARD DIAGRAM
- 6.6 DRIVER BOARD DIAGRAM
- 6.7 MICROPROCESSOR 4 X 7 LED PATTERN (8 BIT)
- 6.8 INSTALLATION DRAWING

1. GENERAL INFORMATION

1.1 Description

Your All-American scoreboard has been carefully inspected and tested before leaving the factory. It is possible, however, that components may be loosened or forced out of adjustment in transit. If this occurs, follow the troubleshooting guide (section 4). If equipment then fails to operate, contact immediately:

ALL-AMERICAN Service Department
EVERBRITE LLC
P.O. Box 100
Pardeeville, WI 53954
Telephone: (608) 429-2121
Toll Free: 800-356-8146
E-mail score@everbrite.com

Parts being returned for repair are to be sent to:

ALL-AMERICAN Service Department
EVERBRITE LLC
401 S. Main Street
Pardeeville, WI 53954
E-mail score@everbrite.com

NOTE

If you need to send parts in for repair, please call the ALL AMERICAN service department for a returned goods authorization (RGA) number.

1.2 Identification

The serial number tags are located on the back of the control console and the lower right hand corner on the face of the scoreboard display. When contacting the factory for assistance it is important that the model number and serial number are known.

1.3 Damage

Upon receipt, check for visible damage. If this occurs, or if damage is found after shipment has been accepted, follow the damage claim procedure.

1.4 Damage Claim Procedure

An instruction sheet is enclosed advising the consignee in case of damage in transit. If damage is noted at the time of delivery, consignee must obtain an 'Inspection of Bad Order' from the delivering carrier. In order to process your claim, this must be properly filled out with a complete statement of all damage and it must be signed by the carrier.

If damage is discovered after delivery, you should call the delivery company. Have them make out a Concealed Damage Report. Fifteen days after delivery are allowed, so this should be done promptly or it is impossible to process this claim.

Advise EVERBRITE corporation of necessary replacement parts, or repairs.

Consignee will be invoiced and then should file a claim with the carrier to recover charges. To file your claim follow this procedure:

- (A) Cost of replacement parts or repair charges are invoiced to the carrier by the consignee.
- (B) The following documents, properly filled out, plus invoice, are forwarded to the trucking company in support of your claim:
 - (a) Original bill of lading
 - (b) Original paid freight bill
 - (c) Certified copy of original invoice
 - (d) Standard form for presentation of loss and damage claim

2. INSTALLATION

2.1 General Information

Shipping papers accompany each scoreboard. Check carefully to see that you receive the following:

- 1 ea 4-sided Basketball Display
- 1 ea Control Console
- 1 ea Service Manual
- 1 ea AC Wall Adaptor

2.2 Inspection

Inspect each unit and tighten all screws and fittings that may have loosened in shipment.

2.3 Pre-Test

Before installing the scoreboard, pre-test all functions.

- (A) Connect the scoreboard to a 15 AMP, 120 Volt AC circuit.
- (B) Plug the power adaptor into the control console and into a wall outlet.
- (C) Make sure that the control console is at least 10' from the scoreboard display.
- (D) Test operate all functions on the scoreboard according to operating instructions in section 3 of this manual.
- (E) When all the functions test out, disconnect the power and the control console before hanging the scoreboard.

2.4 Electrical Connections

This scoreboard requires a 120 V. 20 AMP AC circuit for the exclusive use of the scoreboard. If you want to be able to turn the scoreboard off when not in use, by means other than turning off the circuit breaker, a disconnect switch (NOT SUPPLIED) must be installed by the installer or an electrician.

NOTE

To protect the control from damage, it is advisable that you disconnect the control and store in a dry secure area when not in use.

NOTE

This equipment is **UL** and **NRTL** approved and complies with the requirements in part 15 of the FCC rules for a class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and television reception, requiring the operator to take whatever steps are necessary to correct the interference.

3. CONTROL CONSOLE OPERATION

3.1 Scoreboard Power

Turn on the branch circuit to the scoreboard. The scoreboard will blank all figures.

3.2 Console Display

The 2 line by 20 character Liquid Crystal Display module displays the scoreboard information entered from the keyboard. The following information is displayed during normal operation: Time, Home and Guest scores, Period, Home and Guest Bonus, Ball Possession, Auto Horn Enable, and 1/10 Second Enable.

3.3 Console Power

Plug the hand held remote control into the scoreboard control console if you have a hand held time control.

Plug the control console into the wall junction box.

Push **ON/OFF** once to turn the console on.

Push **ON/OFF** a second time to shut the console off.

When first turned on; the console display should show as follows.

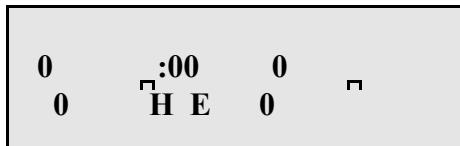


3.4 To Use Scoreboard

Enter the two digit code (58) shown in the upper right corner of the keyboard as in the following example:

Push **CODE** **5** **8** **ENTER** .

When the proper code has been entered, the console LCD will show as follows.



Home and Guest scores will now show "0", and the timer will show ":00".

3.5 Setup

The **SETUP** key will step through a list of operational settings.

Press **YES/NO** or make Numeric Entries to make changes.

Pushing **ENTER** without any other input skips to the next item.

Pushing **CLEAR** exits setup and all changes are kept.

Select brightness level for the scoreboard digits by pushing 1-8 and **ENTER**

Select game time period. Example, 800 and press **ENTER** for 8 minutes.

Select time out length. Example, 100 and press **ENTER** for 1 minute.

Select time outs allowed. Example, 3 and press **ENTER** for 3 time outs.

Select automatic horn for end of period. Example, Yes/No and press **ENTER**

Select 1/10 second timing for the last minute of play. Example, Yes/No and press

ENTER.

Select set time of day clock. Example: Press **2** **1** **5** **ENTER**

for 2:15. The scoreboard will display the time of day after game time use, if desired.

Accurate time will be kept without power to the scoreboard for up to 2 months.

3.6 Timing

The main game time period is set in the "SETUP" Program, however this time

period may be changed or edited using the **EDIT TIME** key.

To change the period time; Push **EDIT TIME**, the desired time period, then

ENTER.

To reset the period time to the original setting; Push **TIME RESET**.

To change the time period directional mode for counting up or down; Push

UP/DOWN.

When in the Up mode, an arrow up symbol is displayed next to the time on the LCD display. If in the Down mode, there is no arrow displayed.

3.7 Team Scores

The Home and Guest Scores can be changed in five different ways.

- (A) To add 1 to the existing score: Push **+1**.
- (B) To add 2 to the existing score: Push **+2**.
- (C) To add 3 to the existing score: Push **+3**.
- (D) To directly enter or correct a score: Push Home or Guest **SCORE** followed by the desired number, then **ENTER**.

Example: Present Home Score is 15. Change the score from 15 to 23.

Push: Home **SCORE** **2** **3** **ENTER**.

- (E) To clear the score: Push **SCORE** **CLEAR**.

3.8 Horn

The horn will blow each time **HORN** is pressed.

The horn will blow automatically at the end of each period for 2 seconds, if selected in the setup mode.

An 'H' is displayed on the LCD when this function is enabled.

3.9 Bonus Indicators

Push Home or Guest **BONUS** to illuminate the appropriate bonus indicator. A '<B' or 'B>' will be displayed when the bonus is illuminated.

3.10 Period Indicators

Push **PERIOD** once to increment the period indicator. The LCD display will show the period directly below the time.

3.11 Timeout Period

An automatic timeout period is selected in the setup mode, and is provided for "Time Outs" when the main timer is not running.

Push: **TIME OUT TIMER** to start the 1 minute timer. The LCD will show "TIME OUT = 1:00" and start to count down. When 1 minute has elapsed the internal beeper sounds, and the display returns to the current game time.

If you want to return to play before the Time Out Timer gets back to zero,

push: **TIME OUT TIMER** **CLEAR** and the console will return to play mode.

3.12 Time Outs Left

The Time Outs allowed per game for each team are selected in the setup mode.

If, at Time Out, you push home or guest **TIME OUT**, it will start the time out timer and subtract a time out from the home or guest team. At the end of the selected time out period the LCD will go to game time and be ready to go. If you wish to start the game again before the one minute time out period ends, just push:

TIME OUT **CLEAR** and the LCD will again go to the game display.

3.13 Ball Possession Indicator

The ball possession indicators alternate with each **BALL POSS** entry.

The possession is displayed on the LCD with a '<P' or 'P>' to show Home or Guest possession.

Push: **POSS.** **CLEAR** to clear both possession symbols.

3.14 Team Fouls

The Home and Guest team fouls are entered in the same manner as the Home and Guest team scoring direct entry method.

Example: Present guest team foul is 3. Change to 4.

Key in Guest **FOUL** **4** **ENTER**

The control display will now show game time, and the scoreboard display will show 4 team fouls for the guest team.

3.15 Player Number and Player Fouls

The player number and player fouls information is entered as in the following example:

If player number 25 gets a foul;

Push **PLAYER NO.** **2** **5** **ENTER** **1** **ENTER** .

The control console memory will store the player numbers and fouls for up to 20 players for each team. This information may be viewed on the LCD display at any time.

This information is now stored in memory. To view the information, push

HOME STATS or **GUEST STATS** key. The first 5 player numbers

entered, and their fouls are displayed.

Push the **HOME STATS** or **GUEST STATS** key a second time to display the next 5 player numbers and fouls. To return to normal game display,

push **GAME DISPLAY** .

To clear a player number/foul from memory: push, **PLAYER NO.** followed by the number you want to clear, then **ENTER** **CLEAR**

3.16 Wrestling Operation

When using the MP-5214 scoreboard for wrestling, replace the basketball slipsheet with the wrestling slipsheet. The code is 60 for wrestling. All keyboard entries are made in the same way as for basketball, with the following exceptions:

The console LCD display shows; Time, Home and Guest score, Home and Guest Bout scores, Period, Weight Class, and Auto Horn Enable continuously.

The **+1**, **+2**, and **+3** keys now control the Bout scores instead of team scores.

To enable the advantage timer, push: **ADV SET** **0** **0** **ENTER** .

Use the Home or Guest **ADV** key to indicate who has the advantage.

When the main timer is running, the **ADV OFF** key will stop the advantage timer.

The Home or Guest **BONUS** indicator will light to show which side has the advantage.

Pushing home or guest **ADV** will restart the timer.

Push **ADV CLEAR** to clear the timer back to :00.

3.17 Volleyball Operation

When using the scoreboard for volleyball, replace the console slipsheet with the volleyball slipsheet. The code is 70 for volleyball. Operation of all keys is similar to basketball operation.

The console LCD display shows; Time, Home and Guest Score, Home and Guest Games Won, Game, Serving, and Auto Horn Enable continuously.

4. MAINTENANCE AND TROUBLESHOOTING

4.1 Introduction

This section gives maintenance and troubleshooting information. Included are troubleshooting guides for typical scoreboard malfunctions. If the cause of a problem cannot be determined, please contact the customer service department.

WARNING !!!

120 VAC wires are exposed whenever the cover over the power supply assembly is removed from the scoreboard. Use extreme caution during troubleshooting or repair. To avoid possible damage to equipment or personal injury, always turn off the main power before removing the cover or replacing assemblies.

4.2 Test Equipment

A simple analog or digital voltmeter will be sufficient for all user repairable problems. Printed circuit boards requiring troubleshooting should be returned to the factory.

4.3 Troubleshooting

Whenever possible, follow the troubleshooting guides prior to contacting the customer service department. If a problem not described in the guides exists, contact the customer service department immediately. Refer to the diagrams provided for assistance in troubleshooting scoreboard malfunctions.

4.4 Troubleshooting Guides

(A) Scoreboard doesn't light

- (a) Check that the main power switch is turned on.
- (b) Replace any defective or blown fuses.
- (c) Check the power connections and voltages at the scoreboard.
- (d) Check to see that the Green LED on the power supply is lit.
- (e) Check for 12 VDC at the power supply terminal.
- (f) Contact the customer service department.

(B) Control console doesn't turn on

- (a) Check that the AC power to the AC adaptor is turned on.
- (b) Replace any defective or blown fuses.
- (c) Check the power connections and voltages in the control.
- (d) Contact the customer service department.

(C) The scoreboard digits light, the console works, but there is no control of the scoreboard.

- (a) With the main power switch "off"; remove the cover over the power supply and receiver.
- (b) Check all connections.
- (c) Turn the main power on.
- (d) Turn the control console on and enter the code.

If LED D1 on the receiver board is flashing rapidly call the customer service department.

(D) Scoreboard digits don't light, but the console works

- (a) With the main power switch "off"; remove the cover over the power supply and receiver.
- (b) Check all connections.
- (c) Turn the main power on.
- (d) If the scoreboard still doesn't light, check the voltage between the positive and negative terminal strips on the power supply for 12 VDC with a voltmeter set on the 12 VDC or higher scale.

If the voltage is 12 VDC or greater, go to (e).

If the voltage is less than 12 VDC check the power supply input voltage for 120 VAC and contact the customer service department.

(e) Check LED D4 on the receiver board. It should be medium brightness.
Change the Dim level on the control console. D4 brightness should change.

(f) Check if LED D5 on the receiver board is on.

If D5 is on, check if D2 and D6 are flashing and call customer service department. The flash will be very fast. The LED's may appear to be on at half brightness.

If D5 is not on, check that the receiver board is plugged into the power supply and call the customer service department.

(E) The scoreboard works, but some digits do not change.

(a) Reseat the data in ribbon cable connectors.
(b) Swap the driver board with a driver further down the shift order.
(c) If the digit still doesn't work call the customer service department.

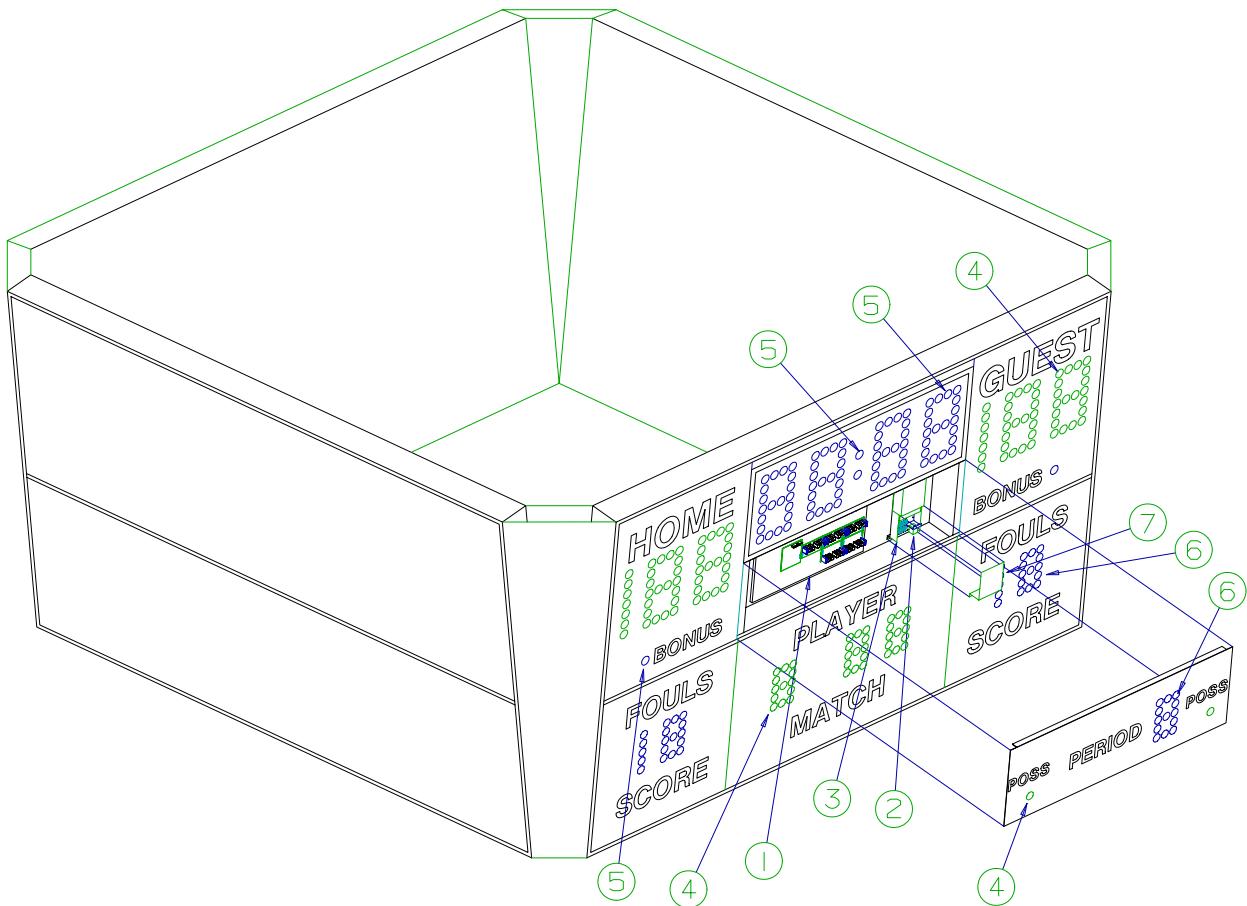
CLUSTER REMOVAL

If it becomes necessary to remove a LED cluster: Insert a pointed object, like the end of a ball point pen, into the two holes in the cluster retaining ring, and rotate the cluster until these holes are at 3:00 o'clock and 9:00 o'clock. At this position the cluster should be removable from the front of the face of the scoreboard.

Reverse the procedure to install the cluster.

5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts



1

figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-525R4 Basketball)				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	150783	Display Assembly		150783
1-1	151036	Controller Assembly, side 1 SEE FIGURE 2	A2	151036
1-1	151032	Controller Assembly, sides 2, 3, & 4 No Radio	A2	151032
1-2	EL00525P	Relay, 12 VDC DPDT 10A contacts	K1	MY2DC12(S)
1-3	151731	Power Supply Plate Assy SEE FIGURE 3	A9	151731
1-4	150822	Cluster, Green		150822
1-5	150820	Cluster, Red		150820
1-6	150821	Cluster, Amber		150821
1-7	151727	Power Supply Cover		151727
1-8	EL00770P	Antenna, 2.4 GHZ 5Db RSMA		Nearson
1-8A	WI00062P	Antenna Cable, 3' Coaxial		
1-9	703609	Horn, 350N		703609
	151742 151684 151785 SW005100 EL00771P EL00769P EL057700 151682 WH009100 MP00468P	Control Console, 5000R Slipsheet Pair Transmitter PCB Assembly ***** PROGRAM MP5000 V2.12 ***** Toggle Switch, Transceiver, 2.4 GHZ AeroCom Antenna, 2.4 GHZ LCD Display, 2 Line 20 Character Keyboard Assembly, Ribbon Cable Assembly, 14C 8" Enclosure,	A1 S1 A17	151742 151684 151785 SW005100 EL00771P 151682 WH009100 MP00468P
	EL00478P 151733	Power Adaptor, 9 VDC 1 Amp Cable Assy, 6' Dual		DPD090100-P5-TC 151733

5.2 Controller Assembly Parts

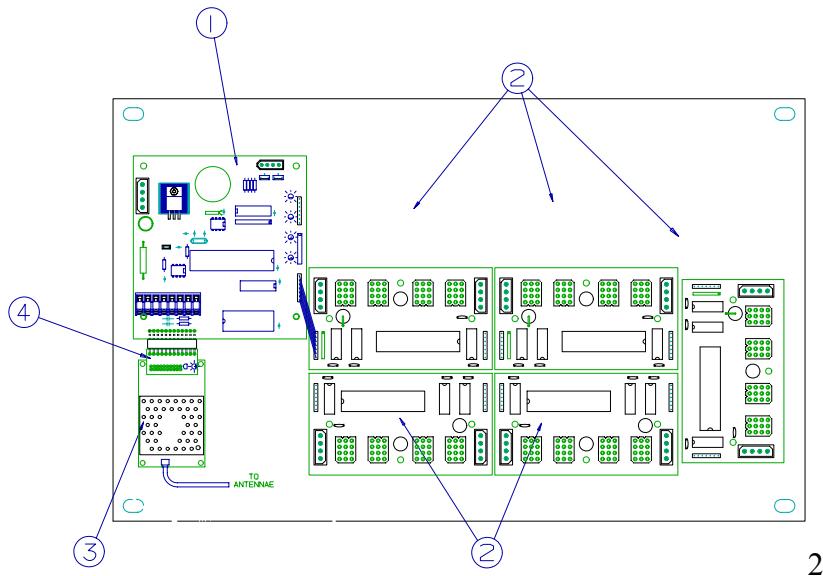
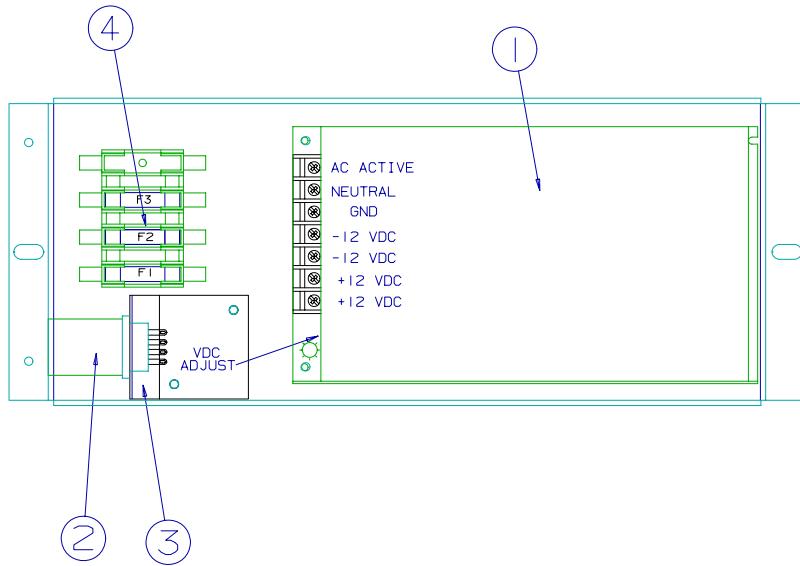


figure 2

CONTROLLER ASSEMBLY

REPLACEMENT PARTS LIST (MP-5214) Controller Assembly				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	151032	Controller Assembly	A2	151032
2-1	150635	PC Board Assy, 5000 Series Receiver ***** PROGRAM RX5000 V2.12 *****	A3	150635
2-2	150634	PC Board Assy, 4 Pos. Driver	A4-A8	150634
2-3	EL00771P	Radio Transceiver, 2.4 GHZ 200 MW AeroComm		EL00771P
2-4	151967	PC Board Assy, AeroComm Adaptor	A-14	151967
2-5	151718	Cable Set, DC Power 4"		151718
2-6	930674	Cable Assy, 3" Ribbon 7C Fem.		CE 100F22-7 Pand
2-7	705723	Spacer, Amerlock		SPC# PCS-6
2-8	922450	Spacer, Alum.		93N2130

5.3 Power Supply Assembly Parts



3

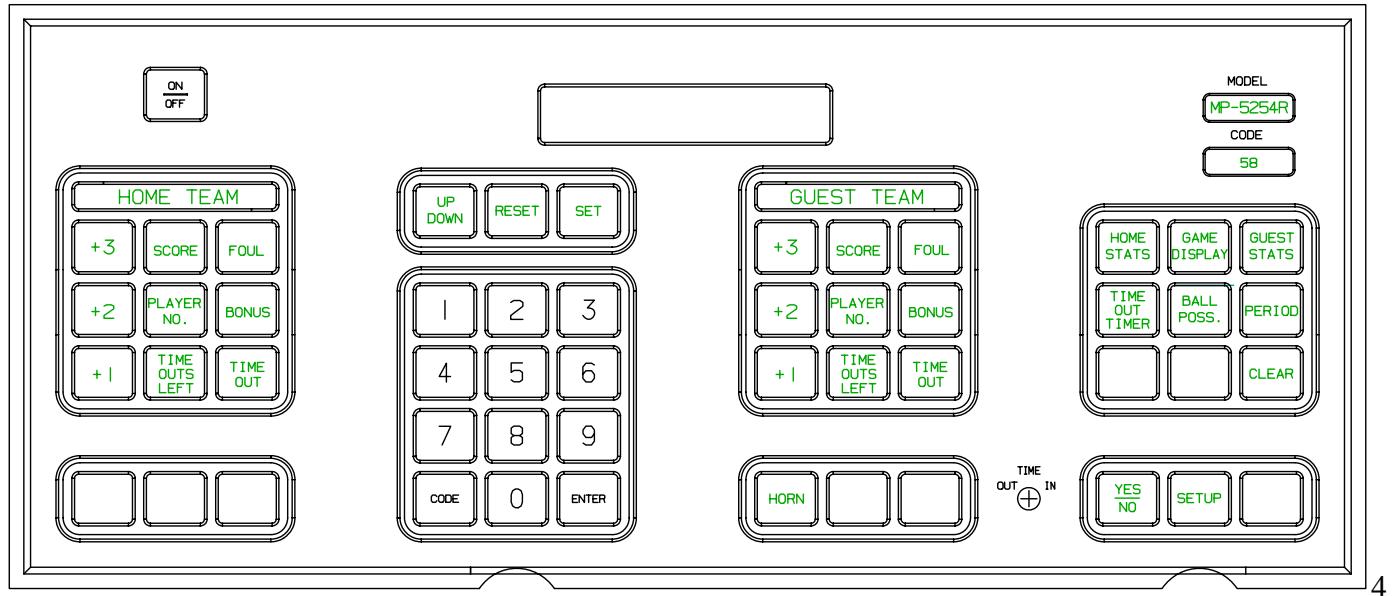
figure 3

POWER SUPPLY PLATE ASSEMBLY

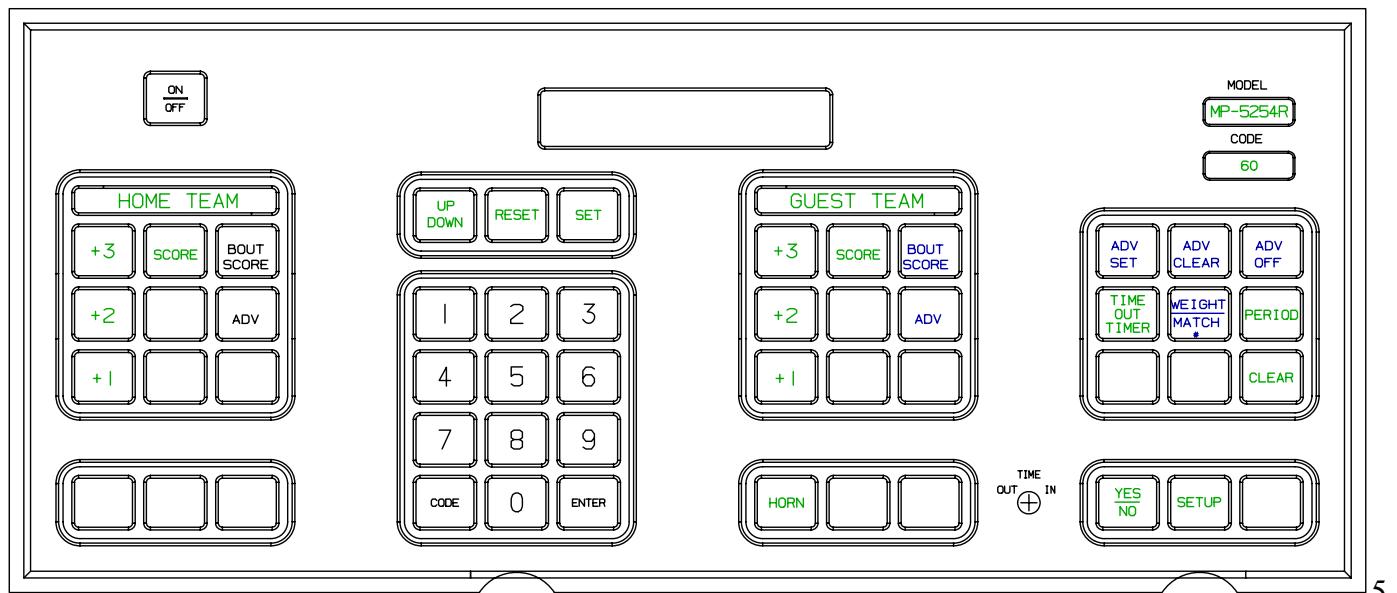
REPLACEMENT PARTS LIST (MP-5214) Power Supply Plate Assembly				
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
3-	151731	Power Supply Plate Assembly	A6	151731
3-1	BL00054P	Power Supply, 12V 150 Watt		S-150-13-5
3-2	EL00525P	Relay, 12 VDC DPDT 10A contacts	K1	MY2DC12(S)
3-3	703118	Socket, Relay	A7	27E008
3-4	701011	Fuse, 5A 250 V	F1	MTH-5
3-5	701037	Fuseholder,		
3-6	151716	Cable Assy, 3' Power		151716

6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout

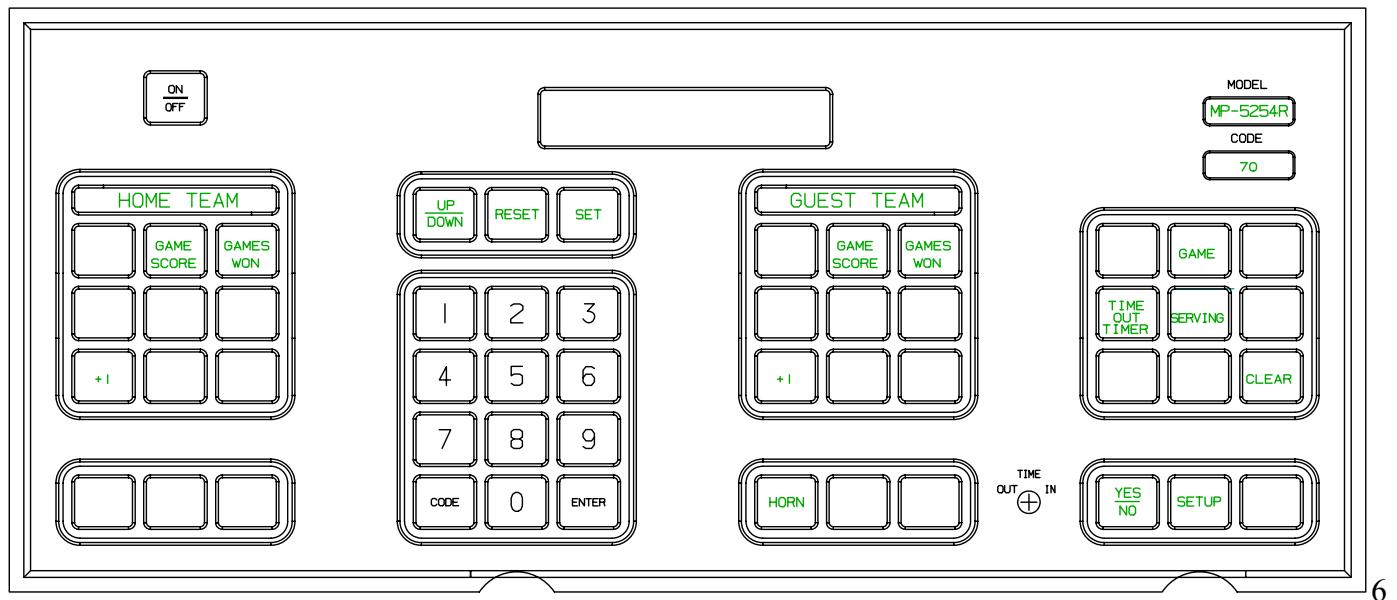


for Basketball Operation



for Wrestling Operation

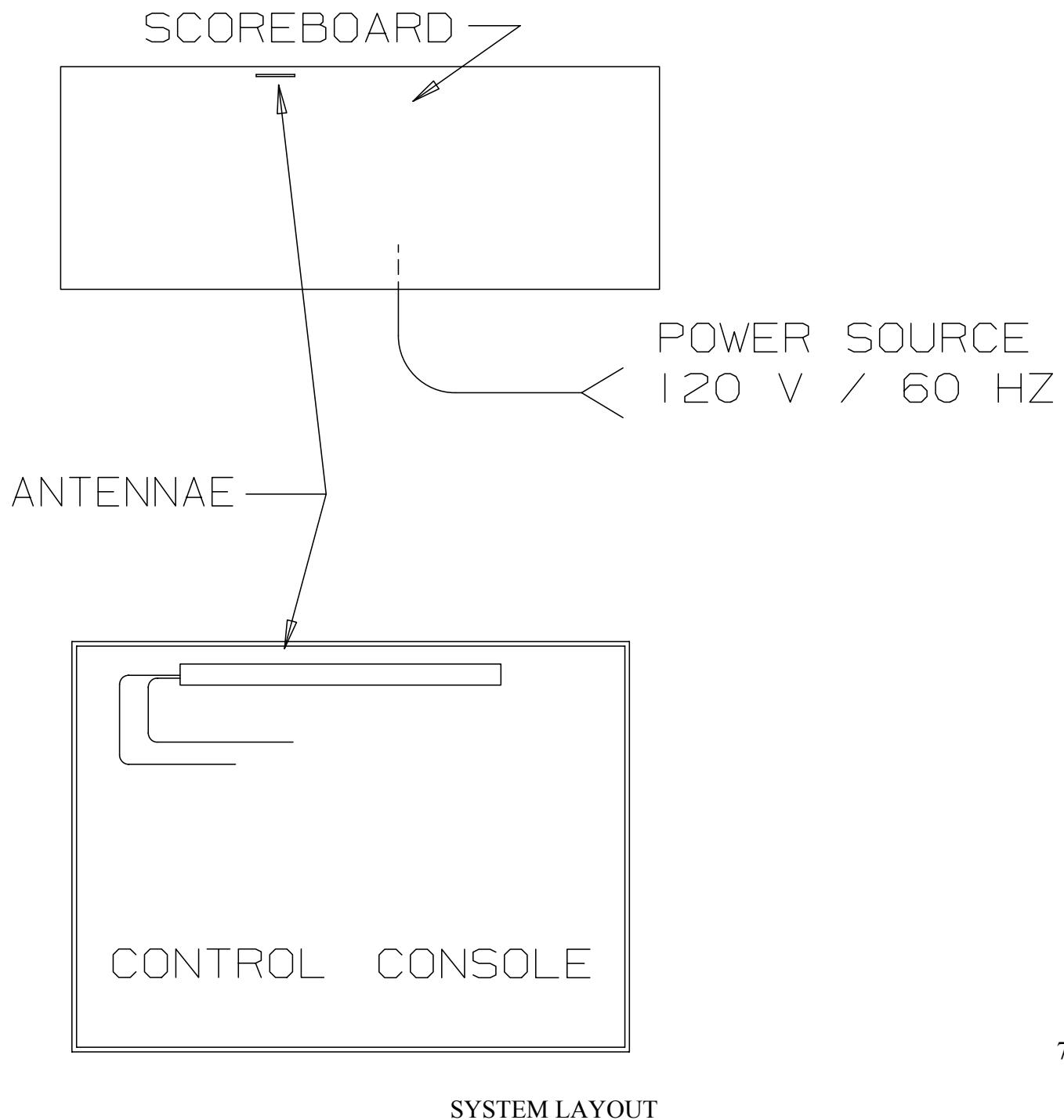
6.1 Control Console Keyboard and Slipsheet Layout (cont.)



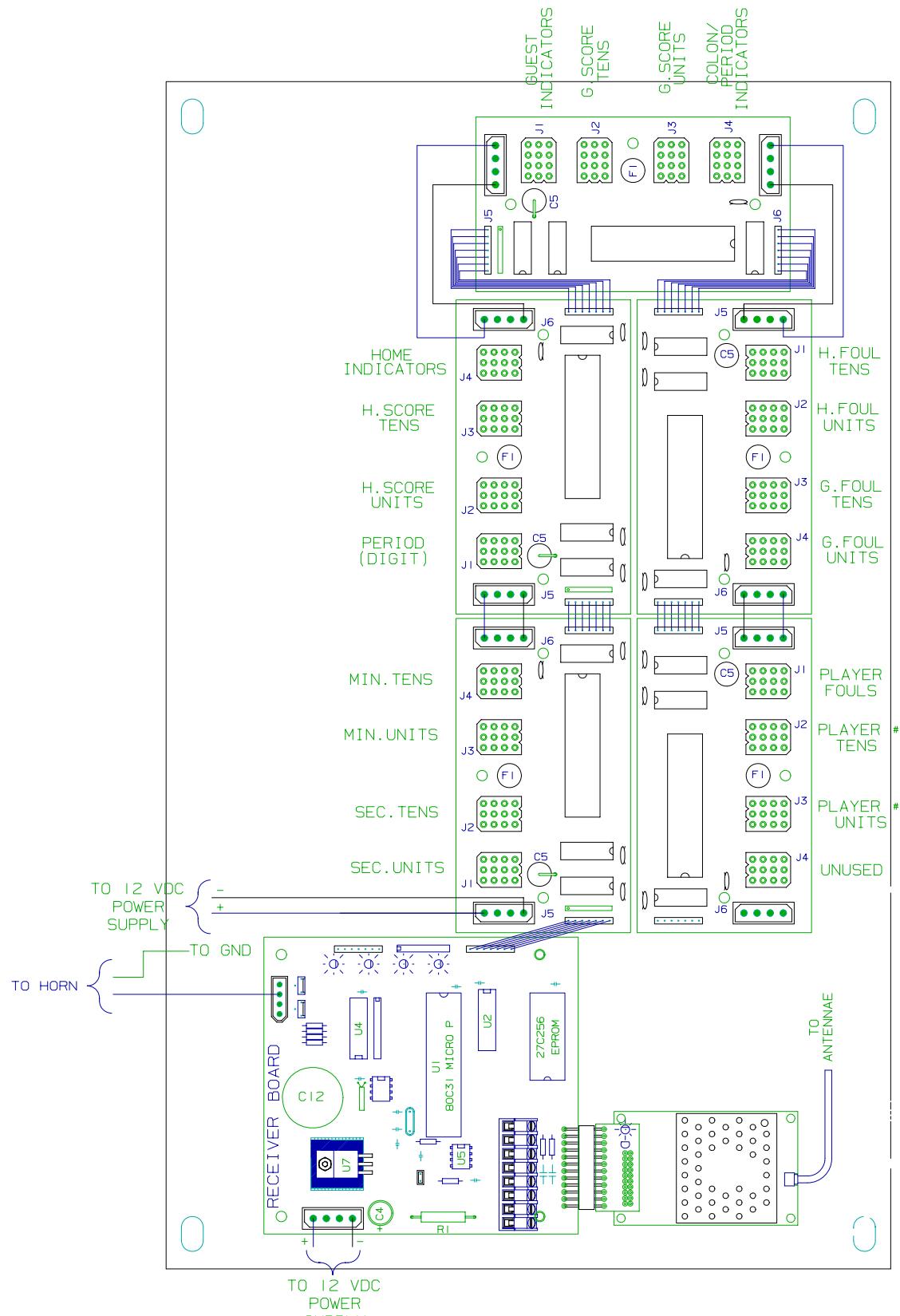
for Volleyball Operation

CONSOLE KEYBOARD

6.2 Scoreboard System Layout

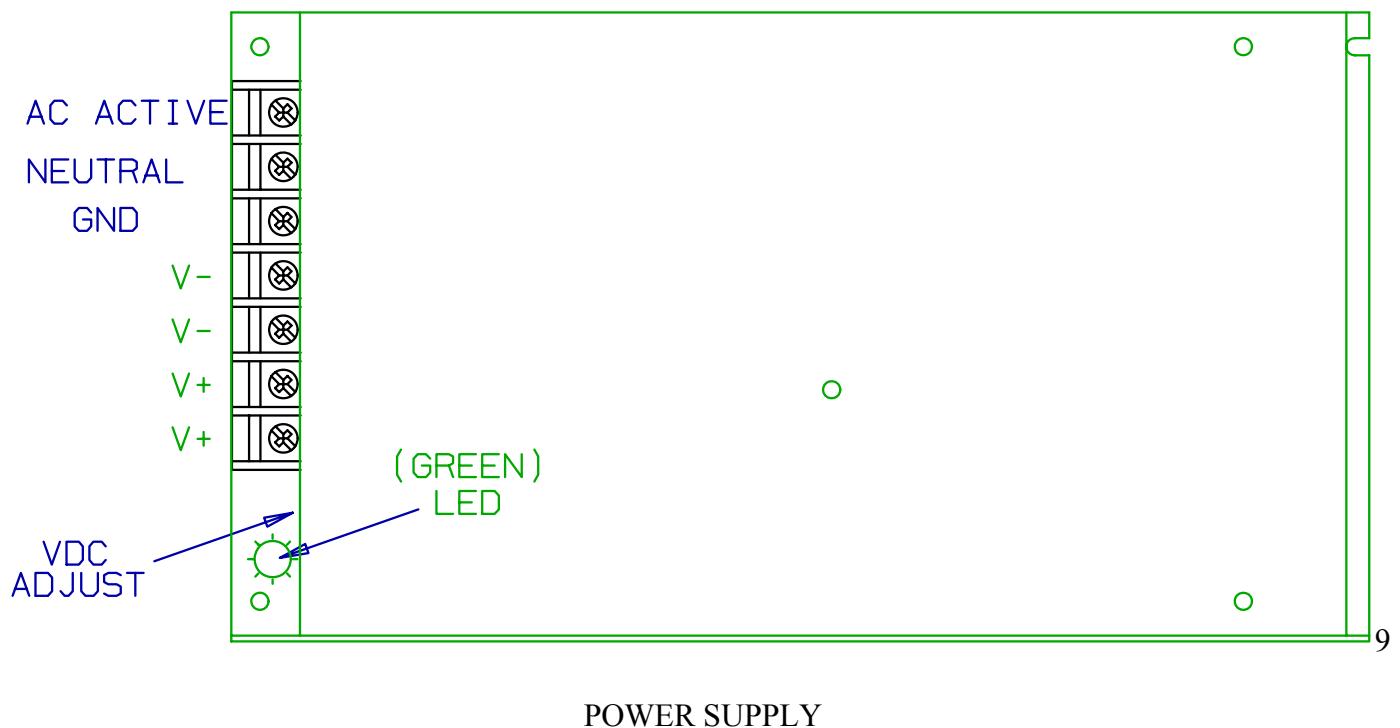


6.3 Controller Wiring Diagram



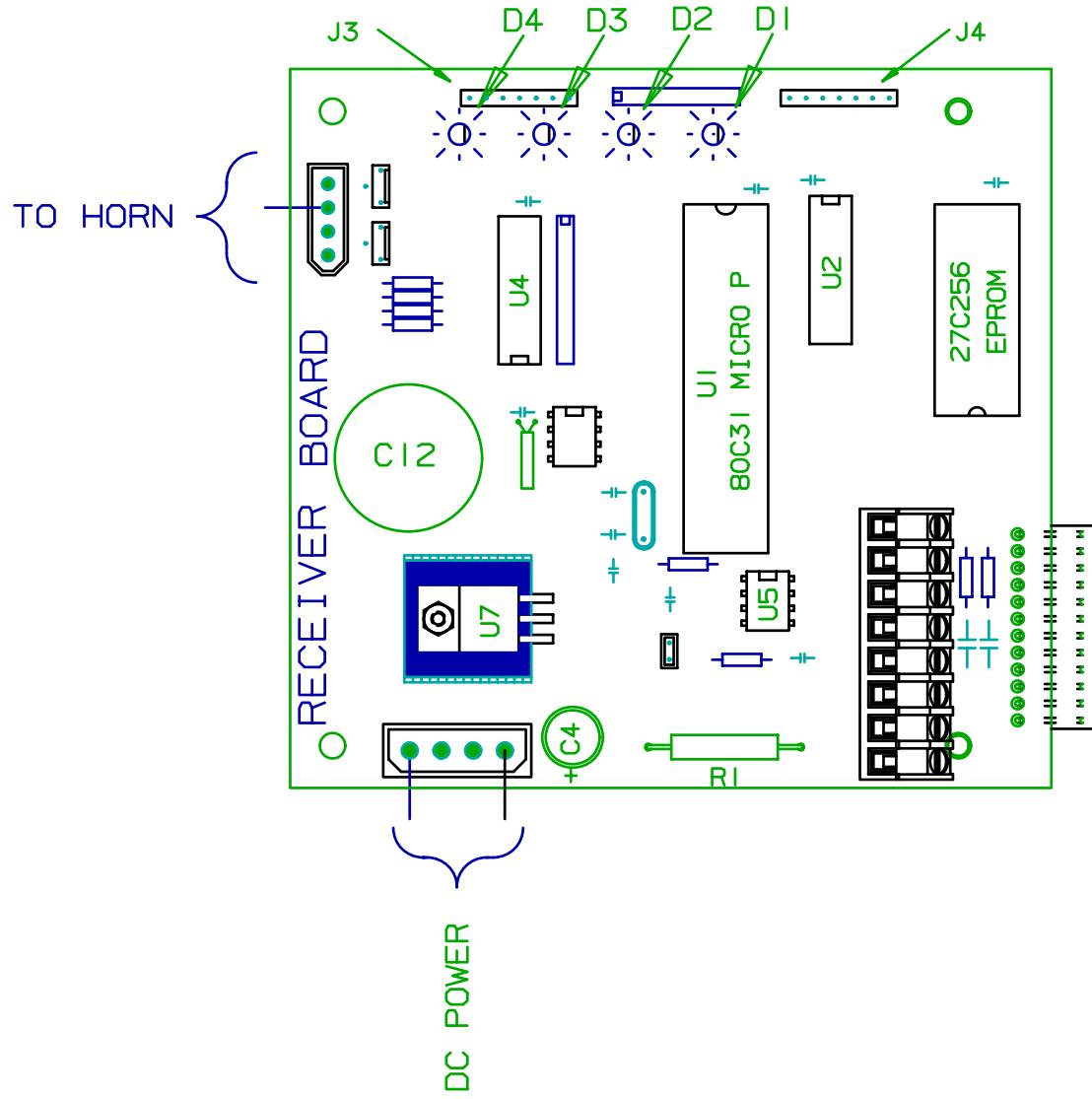
CONTROLLER ASSEMBLY

6.4 Power Supply Diagram



6.5 Receiver Board Diagram

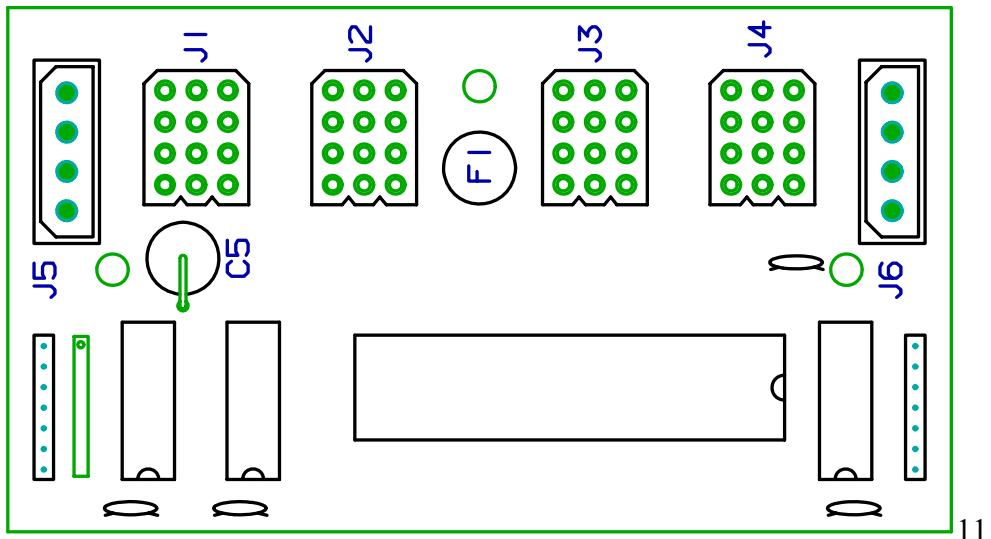
D1 = +5 VOLT
 D2 = DATA IN
 D3 = CH. 1 DATA OUT
 D4 = CH. 2 DATA OUT



10

RECEIVER BOARD

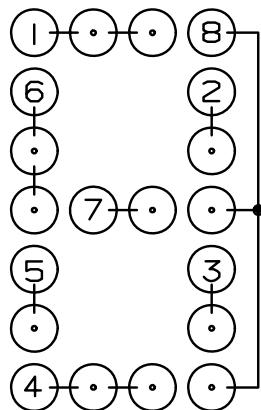
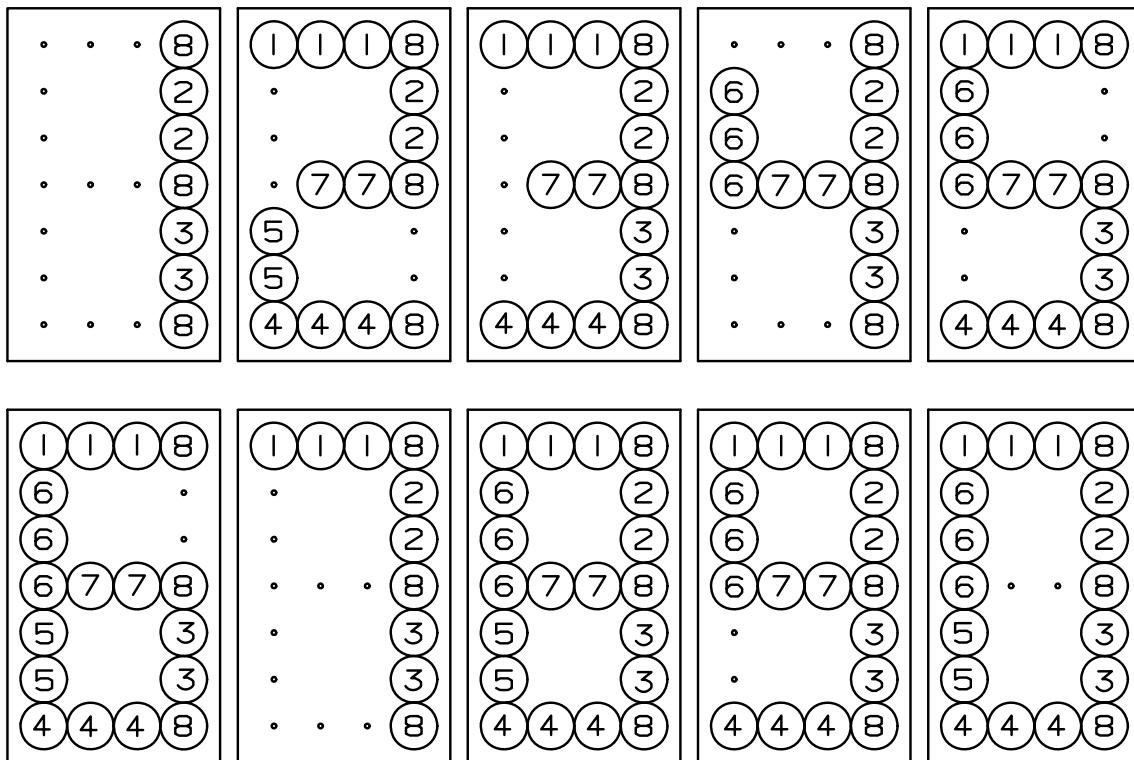
6.6 Driver Board Diagram



11

DRIVER BOARD

6.7 Microprocessor 4 X 7 LED Pattern (8 Bit)



		NUMERALS									
		0	1	2	3	4	5	6	7	8	9
BIN NUMBERS	1	0	.	2	3	.	5	6	7	8	9
	2	0	1	2	3	4	.	.	7	8	9
	3	0	1	.	3	4	5	6	7	8	9
	4	0	.	2	3	.	5	6	.	8	9
	5	0	.	2	.	.	.	6	.	8	.
	6	0	.	.	.	4	5	6	.	8	9
	7	.	.	2	3	4	5	6	.	8	9
	8	0	1	2	3	4	5	6	7	8	9

12

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

