OPERATING INSTRUCTIONS AND SERVICE MANUAL

SHOTS ON GOAL DISPLAY

MODEL MP-5502R


EFFECTIVE S.N. 18,300, August 20, 2002
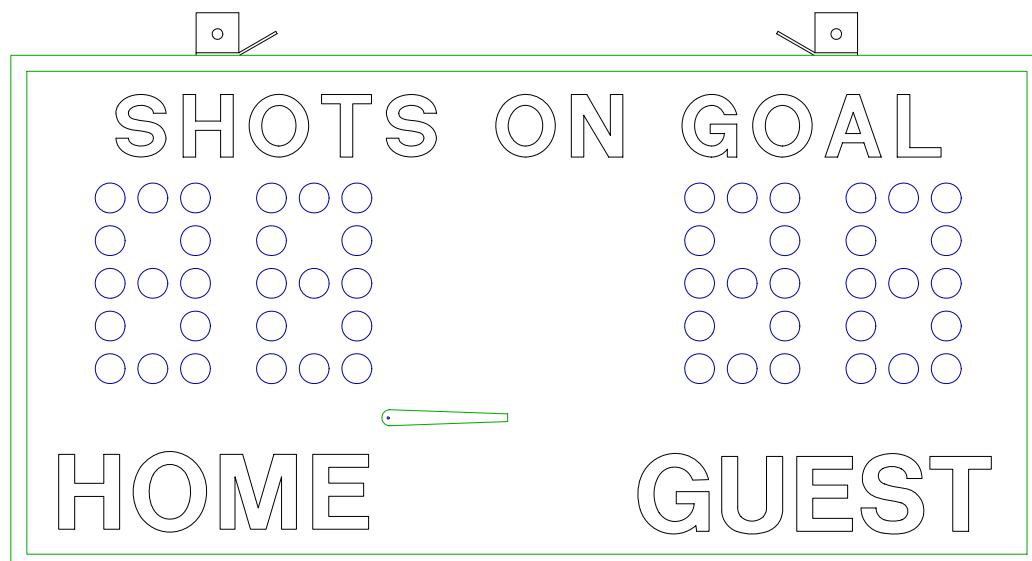
TABLE OF CONTENTS

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

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 Hockey Display
> 1 ea Control Console
> 1 ea Service Manual
> 1 ea AC 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 control console into the top of the scoreboard.

(C)   Test operate all functions on the scoreboard according to operating instructions in section 3 of this manual.

(C)   When all the functions test out, disconnect the power and the control console before hanging hanging the scoreboard.

2.4   Data Cable Installation

The MP-41 data cable carries only low voltage signals and therefore can be installed with or without conduit. consult section 6 for junction box and scoreboard wiring.

2.5   Electrical connections

This scoreboard requires a 120 V. 15 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 not yet **UL** approved, but 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, Scores, Period, and Auto Horn 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 AC adaptor into a wall outlet and into the control control.

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;
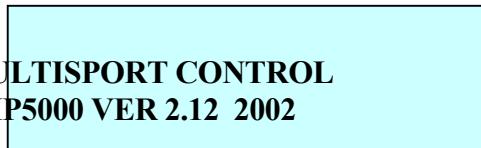
```
        MULTISPORT CONTROL
        MP5000 VER 2.12  2002
```

3.4   To Use Scoreboard

Enter the two digit code (49) shown in the upper right corner of the keyboard as in the following example:

Push   CODE   4   9   ENTER .

When the proper code has been entered, the console LCD will show as follows.
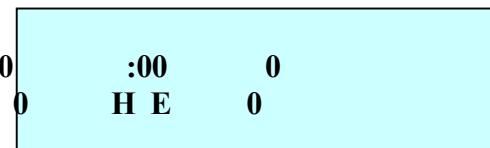
```
  0          :00       0
  0          H  E      0
```

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 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 three different ways.

(A)   To add 1 to the existing score: Push +1 .

(B)   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 .

(C)   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 Goal Indicators

Push Home or Guest GOAL to illuminate the appropriate goal indicator. A '<G' or 'G>' will be displayed when the goal 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.

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.

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.

> **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.

4.3   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 o'clock and 9 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
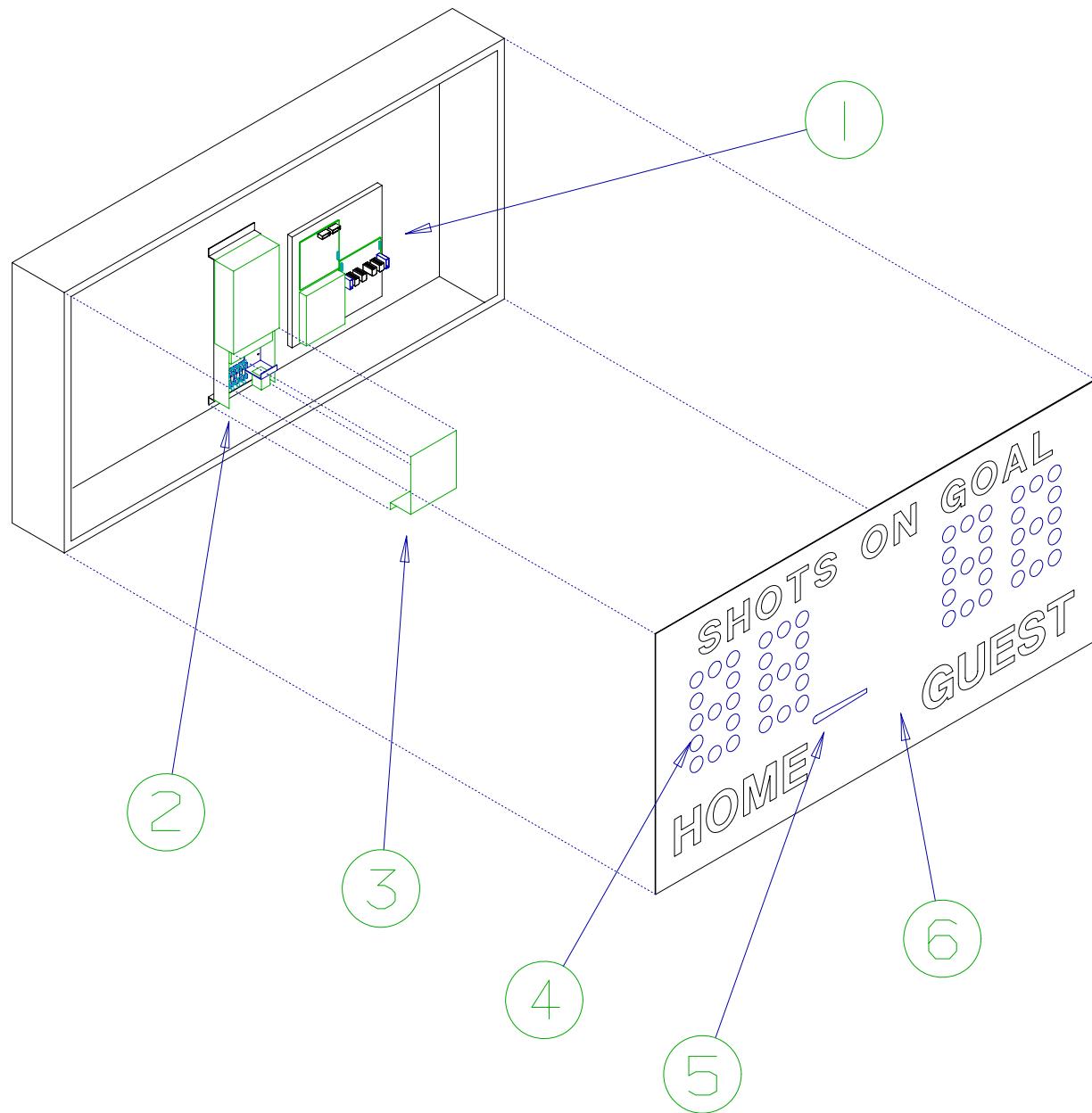
figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-5502R Shots On Goal)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	000000	Display Assembly		000000
1-1	000000	Controller Assembly	A2	000000
		SEE FIGURE 2		
1-2	151731	Power Supply Plate Assy	A6	151731
		SEE FIGURE 3		
1-3	151727	Power Supply Cover		151727
1-4	150821	Cluster, Amber		150821
1-5	EL00474P	Antenna, 2.4 GHZ External		
1-5A	WI00018P	Antenna Cable, 8' Coaxial		RFX-C8
1-6	151247	Face Panel,		151247
	151742	Control Console, 5000R		151742
	151684	Slipsheet Pair		151684
	151692	Transmitter PCB Assembly	A1	151692
		***** PROGRAM MP5000 V2.12 *****		
	SW005100	Toggle Switch,	S1	SW005100
	EL00479P	Transceiver, 2.4 GHZ Radio Zues OEM	A17	
	EL00473P	Antenna, 2.4 GHZ Internal		RFX-A5 Maxrad
	EL057700	LCD Display, 2 Line 20 Character		
	151682	Keyboard Assembly,		151682
	WH009100	Ribbon Cable Assembly, 14C 8"		WH009100
	122763	Enclosure,		
	EL00478P	Power Adaptor, 9 VDC 1 Amp		DPD090100-P5-TC
	151733	Cable Assy, 6' Dual Connect		

5.2 Controller Assembly Parts
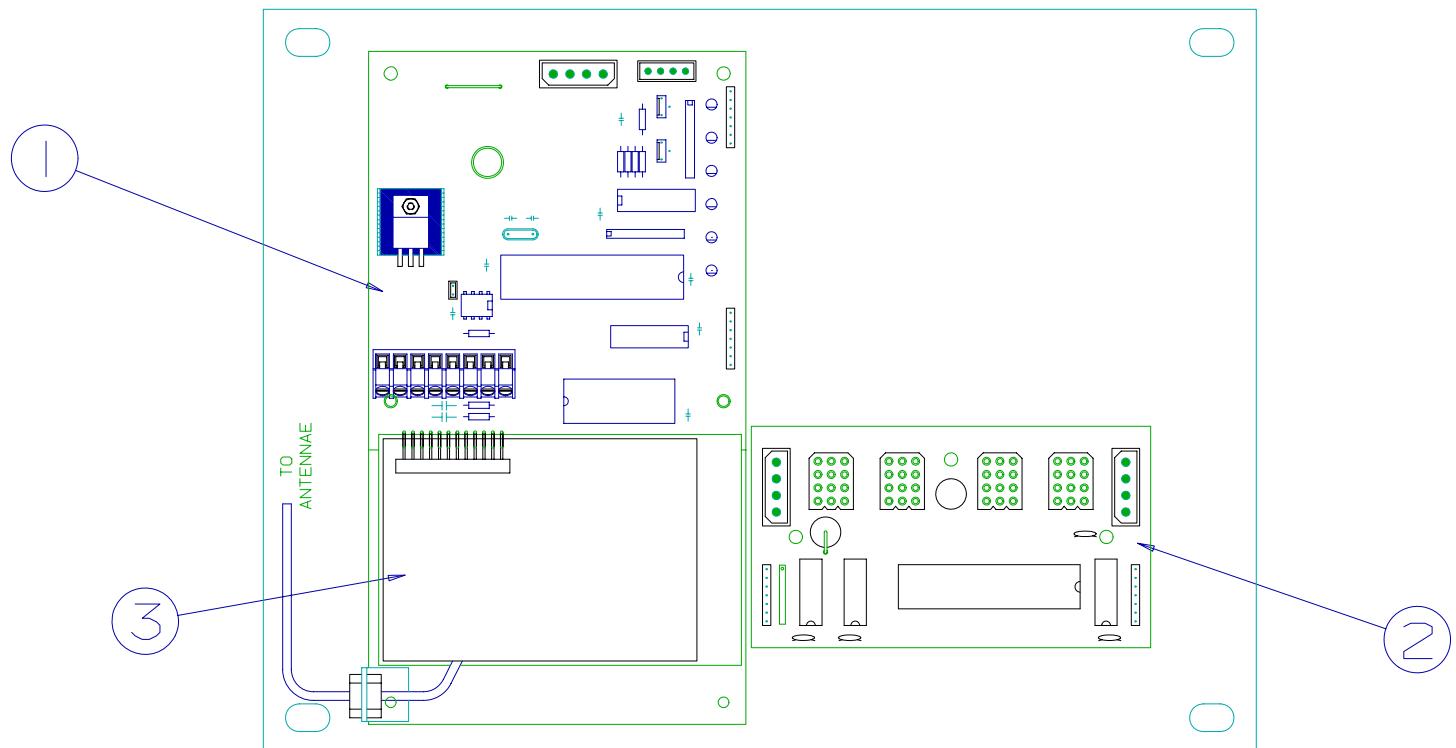
figure 2

CONTROLLER ASSEMBLY

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	000000	Controller Assembly	A2	000000
2-1	150635	PC Board Assy, 5000 Series Receiver ***** PROGRAM RX5000 V2.00 *****	A3	150635
2-2	150634	PC Board Assy, 4 Pos. Driver	A4-A6	150634
2-3	EL00479P	Transceiver, 2.4 GHZ Radio Zues	A17	OEM
2-4	151718	Cable Set, DC Power 4"		150718
2-5	705723	Spacer, Amerlock		SPC# PCS-6
2-6	930674	Cable Assy, 3" Ribbon 7C Fem.		CE 100F22-7 Pand

REPLACEMENT PARTS LIST (MP-5502R) Controller Assembly

5.3 Power Supply Assembly Parts
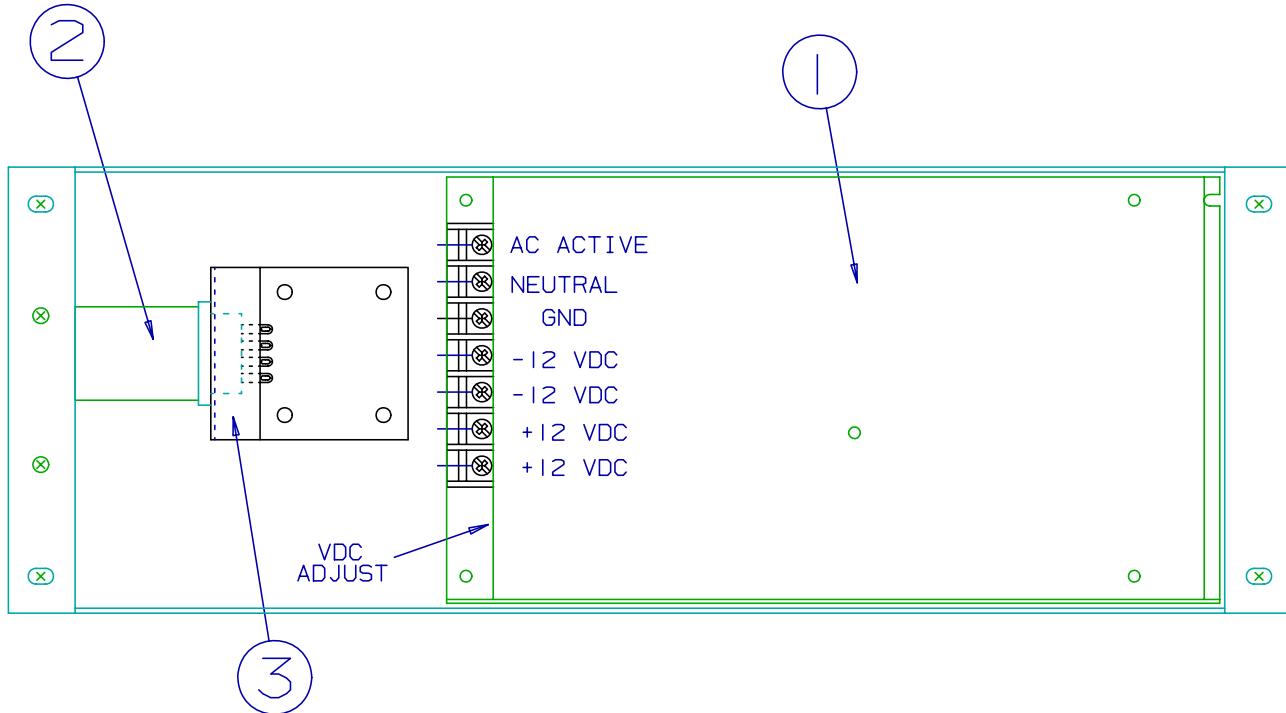
figure 3

POWER SUPPLY PLATE ASSEMBLY

		REPLACEMENT PARTS LIST (MP-5502R) 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 contact	K1	MY2DC12(S)
3-3	703118	Socket, Relay	A7	27E008
3-4	151716	Cable Assy, 3' Power		151716

6. DIAGRAMS

## 6.1 Control Console Keyboard and Slipsheet Layout
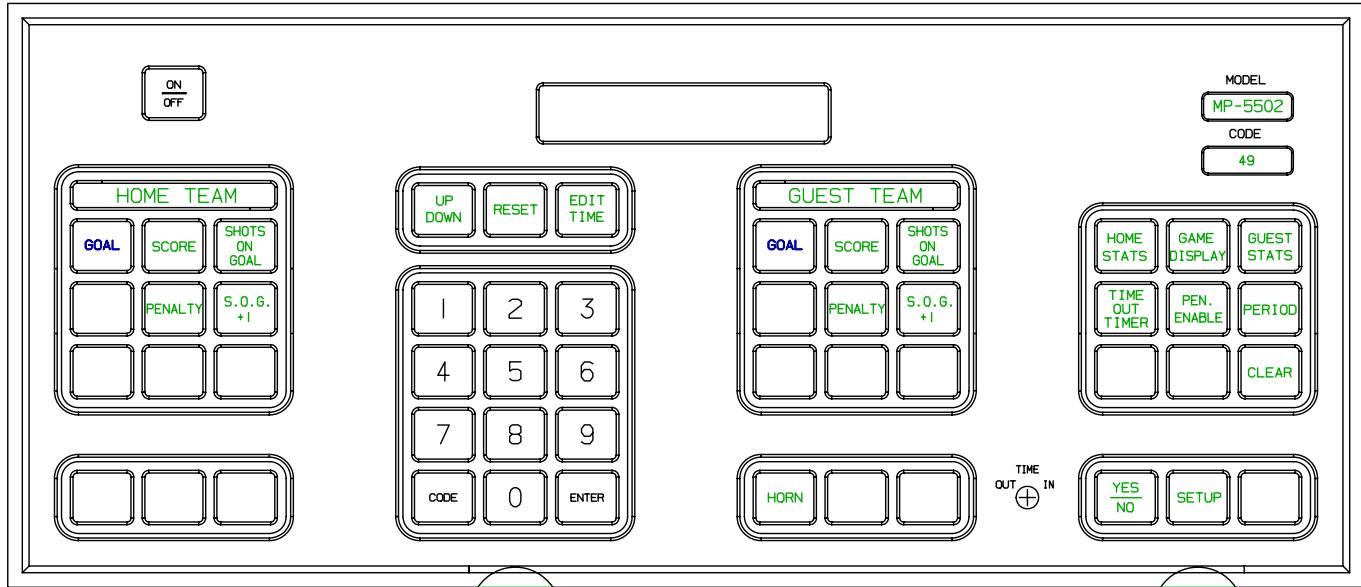
6.2 Scoreboard System Layout

SCOREBOARD

POWER SOURCE
120 V / 60 HZ

AC
ADAPTOR

ANTENNAE

CONTROL CONSOLE
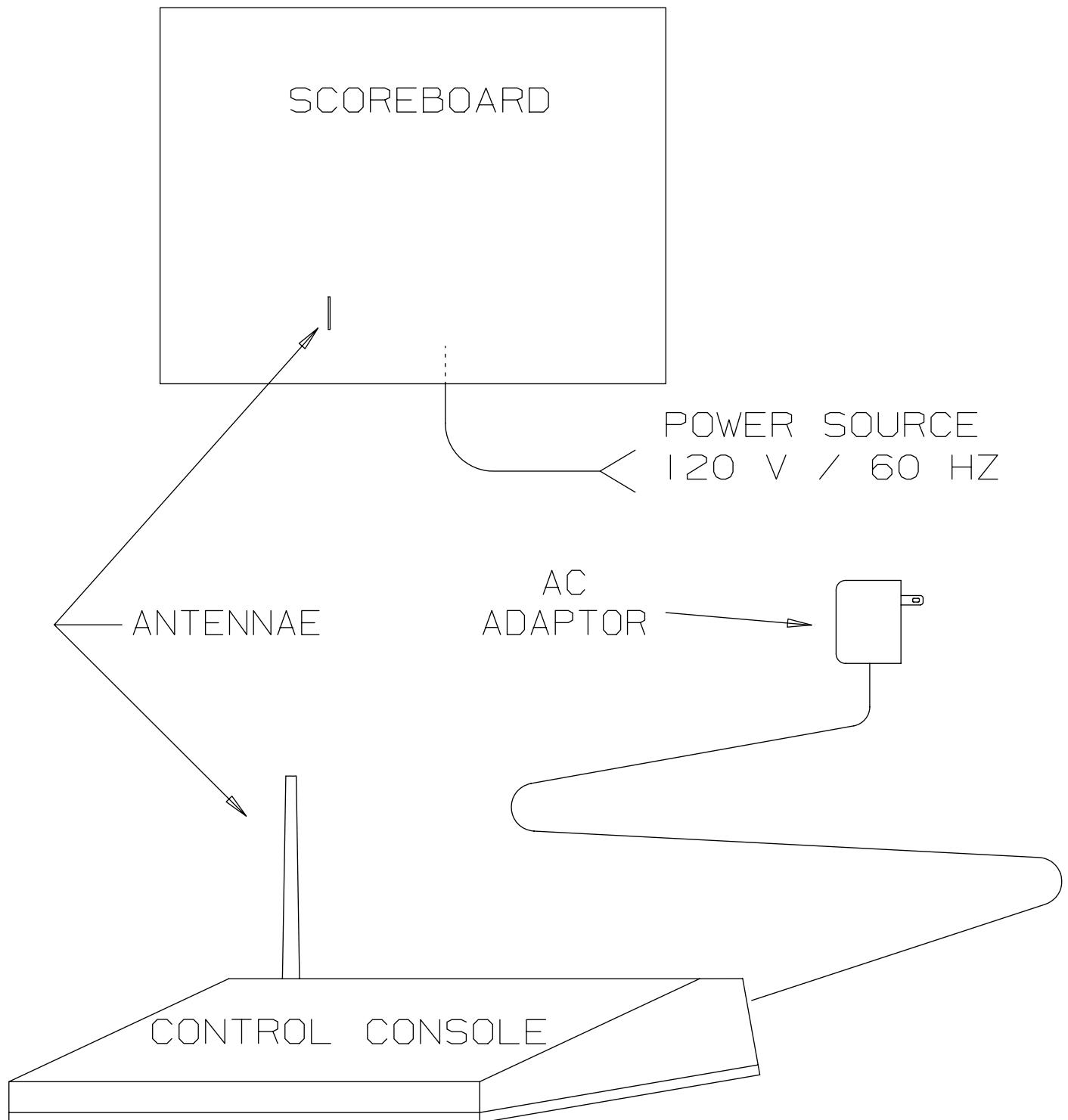
6.3 Controller Wiring Diagram
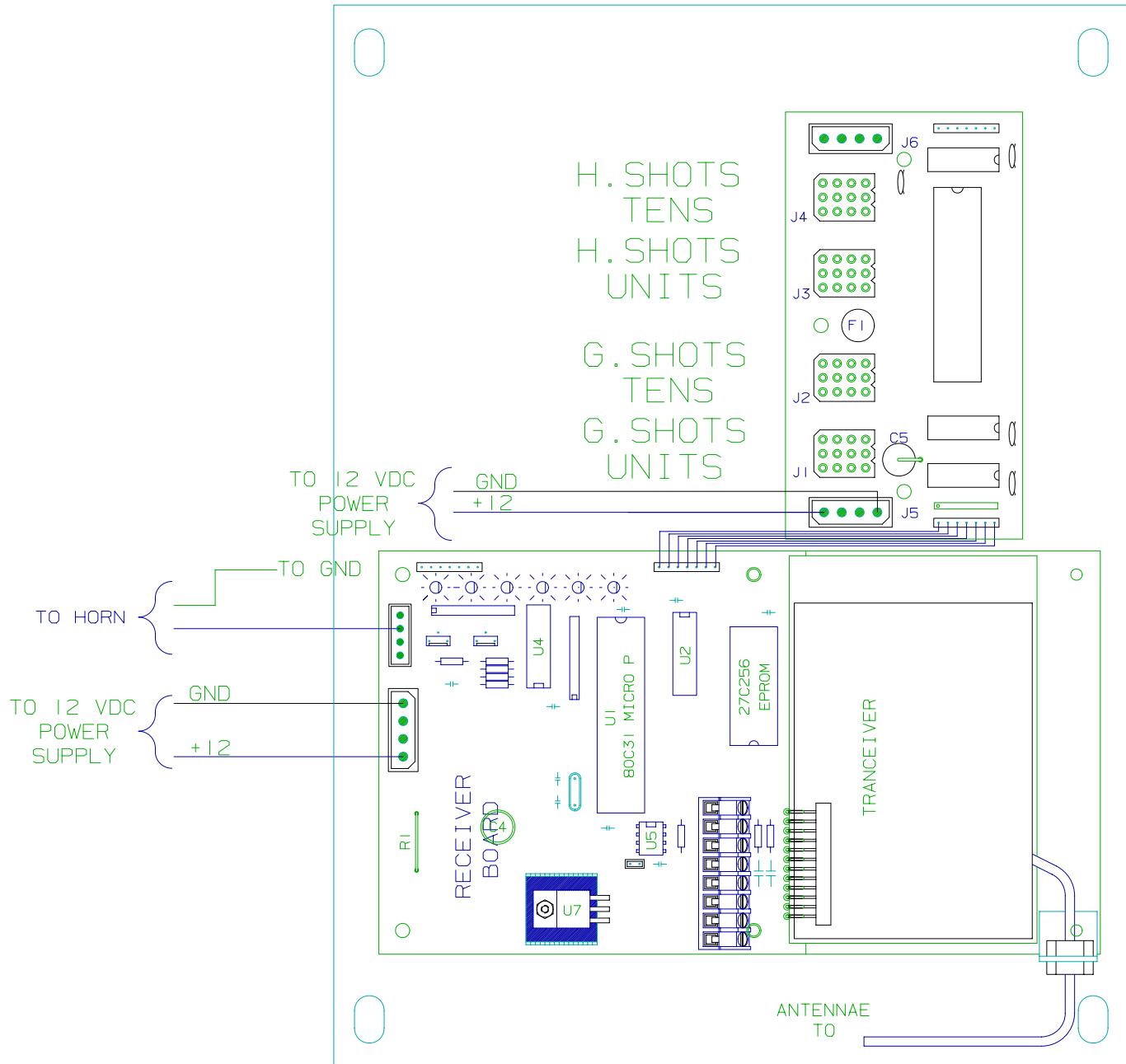
WIRING ORDER

6.4 Power Supply Diagram

AC ACTIVE
NEUTRAL
GND
V-
V-
V+
V+

(GREEN) LED

VDC ADJUST
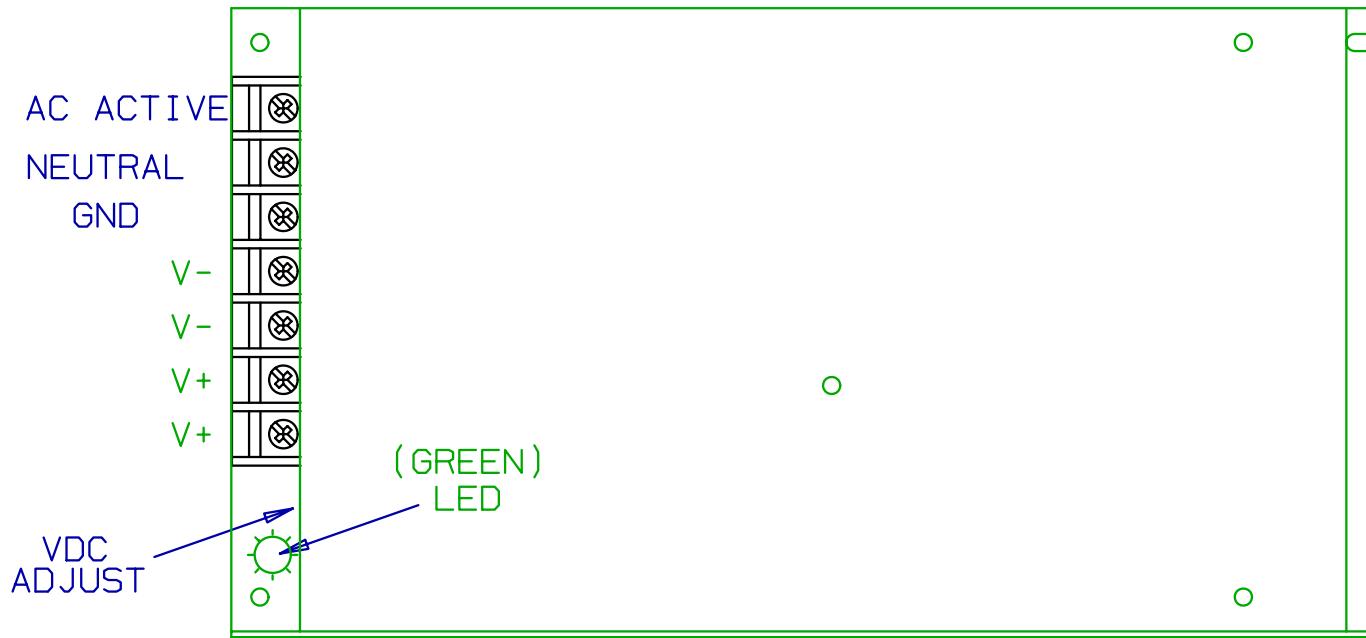
POWER SUPPLY

6.5 Receiver Board Diagram

D6 D5 D4 D3 D2 D1

D1 - DATA IN
D2 - J4 DATA OUT
D3 - STROBE
D4 - DIM
D5 - CLOCK
D6 - J3 DATA OUT

DC POWER

RECEIVER BOARD

U4

U1 80C31 MICRO P

U2

27C256 EPROM

R1

C4

GRN

U7

GRN
WHT
SHLD
BLK
RED

RED
BLACK
SHIELD
WHITE
GREEN

18
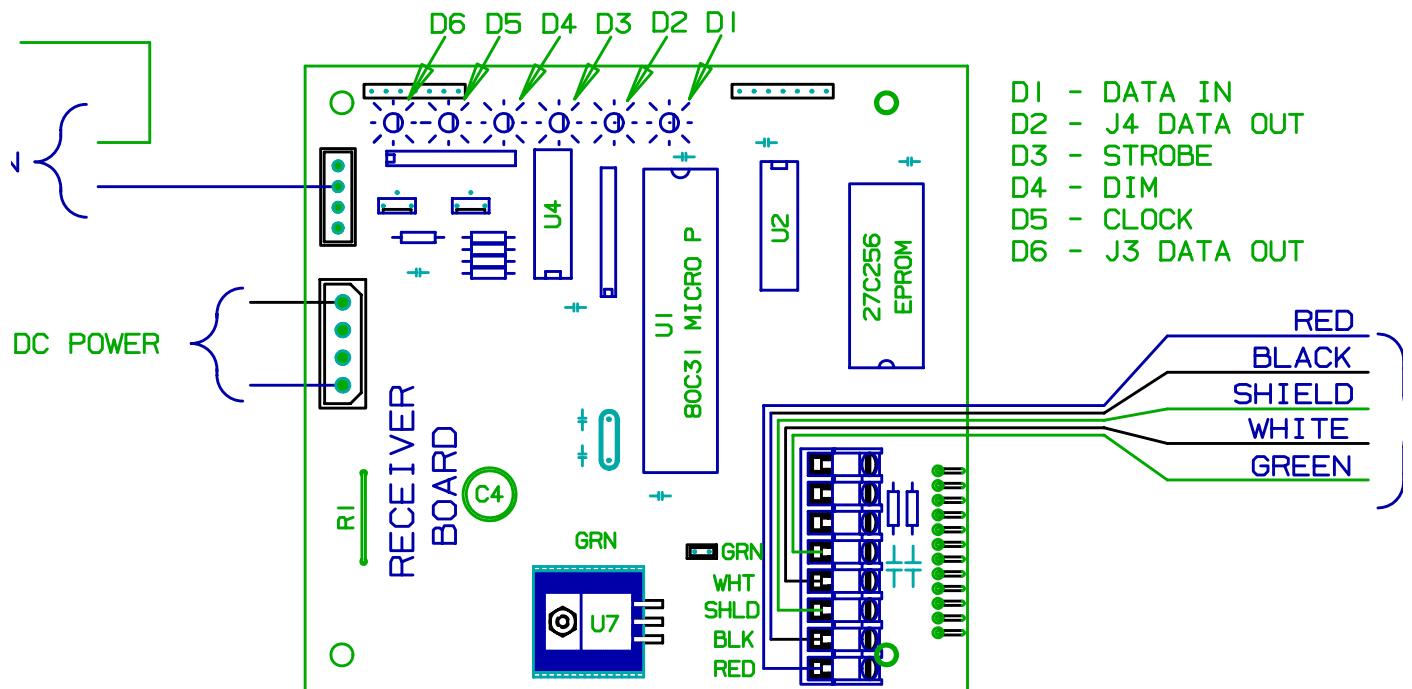
6.6 Driver Board Diagram

RECEIVER BOARD
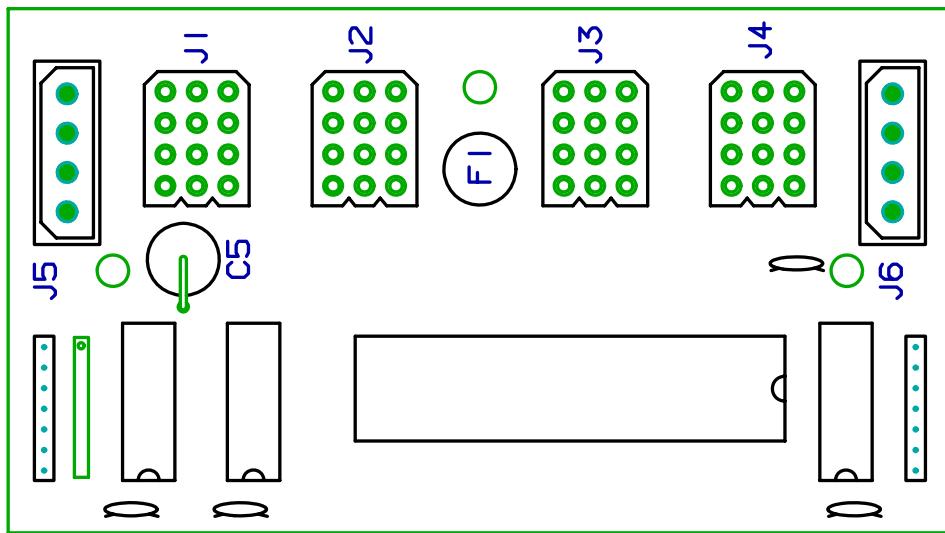
6.7 Microprocessor 4 X 7 LED Pattern (8 Bit)
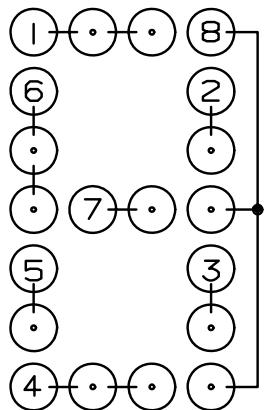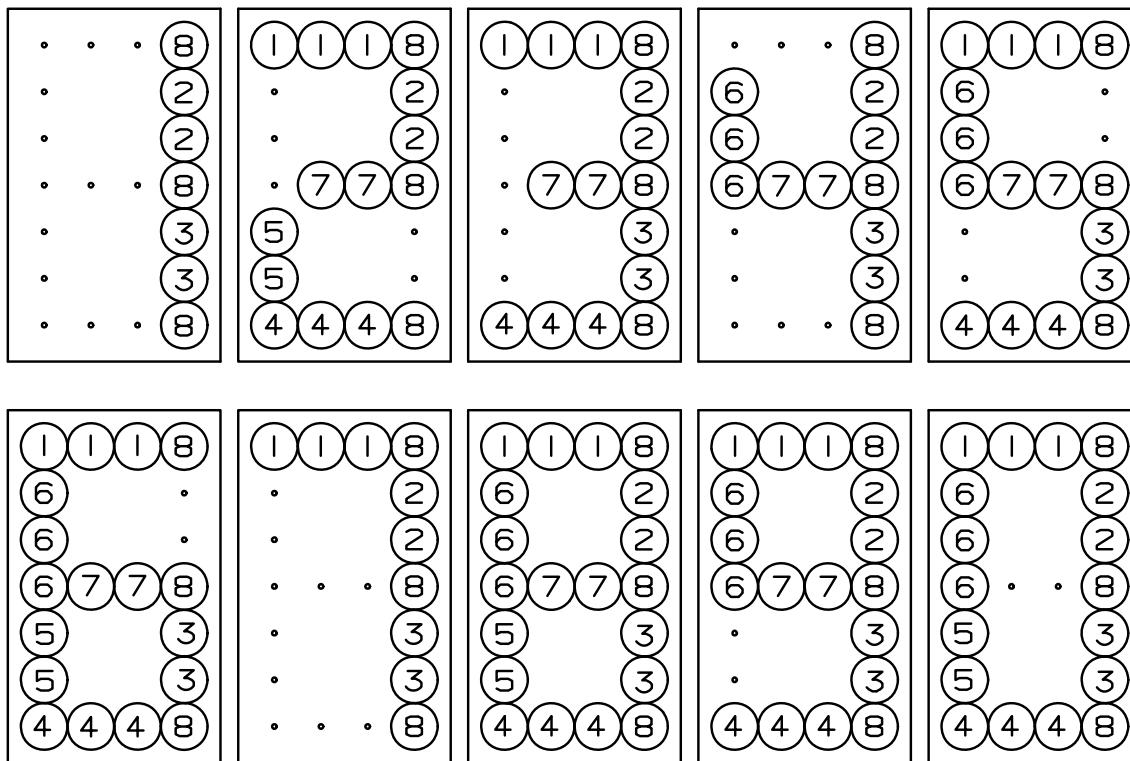
NUMERALS

	0	1	2	3	4	5	6	7	8	9
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

BIT NUMBERS

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.8   Installation Drawing

POWER SOURCE
TO TURN THE SCOREBOARD OFF
TURN OFF THE CIRCUIT BREAKER.
OR
HAVE ELECTRICIAN OR INSTALLER
INSTALL A KEYLOCK SWITCH.
(KEYLOCK SWITCH
SUPPLIED BY OTHERS)

POWER

48"

28"

24"

6"

USE 1/2" DIA. HARDWARE (NOT FURNISHED)
FOR MOUNTING THE SCOREBOARD DISPLAY

INSTALLATION DRAWING