ALL AMERICAN
SCOREBOARDS

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-4209R

HOME

GUEST

POSS PERIOD POSS

BONUS BONUS

EFFECTIVE S.N. 16663, July 13, 2000

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 Corporation
> P.O. Box 97
> Pardeeville, WI 53954
> Telephone: (608) 429-2121
> Toll Free: 800-356-8146

Parts being returned for repair are to be sent to:

> ALL-AMERICAN Service Department
> EVERBRITE Corporation
> 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 Basketball Display
              1 ea Control Console
              1 ea Service Manual
              1 ea 9 VDC Power 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 120 Volt AC outlet.

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

(D)   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. 15 AMP AC circuit for the exclusive use of the scoreboard.

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 **CSA** 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.

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3. CONTROL CONSOLE OPERATION

3.1   Scoreboard Power

Turn on the branch circuit to the scoreboard. The scoreboard will cycle through a self test mode where it tests all the LED pixels. During the self test mode the pixels will be going on and off. After the self test 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, Home and Guest Team
Fouls, 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.

Plug the power adaptor into the control console and into the wall outlet.

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**
> **MP4000 VER 5.5 1999**

3.4   To Use Scoreboard

Enter the two digit code (55) shown in the lower right corner of the keyboard as in
the following example:

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

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

> **0   :00   0**

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

3.5   Time Of Day Timer

To set the scoreboard for Time of Day; push   **SET TOD**

The LCD display should read as follows:

TIME OF DAY =

Push the keys for the current time, and then push   **ENTER** .

Now push   **DISPLAY TOD**   **ENTER** .

The scoreboard will now display Time of Day.

If desirable, you may disconnect the control console and put it away.

If at this time you want to use the scoreboard for a ball game, input the code and it will be set for the game.

After the game, if you push   **DISPLAY TOD**   **ENTER** , you may

disconnect the control, the scoreboard will again show the time of day.

3.6   Time Setting and Control

To set an 8 minute period, Push: **SET** **8** **0** **0** **ENTER** .

Any time up to 99:59 may be preset in a similar manner.

The   **UP/DN**   key determines the timer mode. 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.

Switching the time toggle switch to the IN and OUT position, starts and stops the timer.

Push   **RESET**   to return the timer to the previously set value.

3.7   Final Minute 1/10 Second Option

The control console is capable of displaying 1/10 second during the final minute of the period.

Push   **FINAL MIN 1/10**   to enable the scoreboard to display the 1/10 second

during the final minute of the period. A 'E' is displayed on the LCD to indicate this function is enabled.

The scoreboard timer digits shift two positions to the left in the final minute of play and 1/10 seconds are displayed.

Push   **FINAL MIN 1/10**   again to disable this function.

3.8   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**   **0**   **ENTER**

3.9   Horn

The horn will blow for 1/2 second each time   **HORN**   is pressed.

The horn will blow automatically at the end of each period for 2 seconds.

The automatic horn function may be disabled by using the   **AUTO HORN**   key.

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

3.10 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.

3.11 Period Indicators

Push **PERIOD** once to increment the period indicator. The LCD display will

show the period directly below the time.

3.12 Timeout Period

An automatic timeout period of 1 minute 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
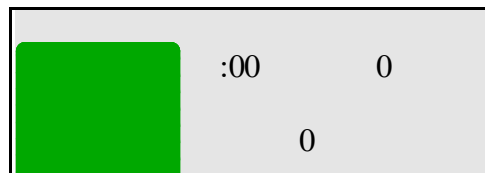
"TIME OUT = 1:00" and start to count down. When 1 minute has elapsed the internal beeper sounds, and the display returns to the current game time.

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

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

3.13 Time Outs Left

When turned on, the LCD shows a little square box for Time Outs Left as indicated below:
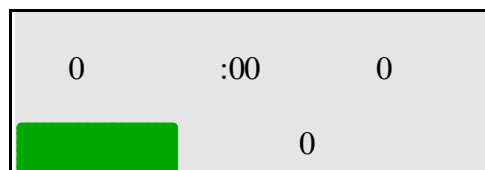

Push: Home **TIME OUTS LEFT**

The LCD will show:

H TIME OUTS LEFT = 0

Push: **3** **ENTER** .

The LCD will show:

The three horizontal marks equals 3 Time Outs Left.

The next time out, if you switch the time switch to time out, and 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 one minute 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 clear and the LCD will again go to the game display.

3.14 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.

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 controller 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 and console doesn't work

   (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) Contact the customer service department.

(B) The console doesn't work

   If the control does not work, check the connections.

   If the console still does not work, 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 D4 on the receiver board is flashing call the customer service department.

   If LED D4 on the receiver board is not flashing, plug the control console directly into the top of the scoreboard.

   If LED D4 on the receiver board flashes now check the junction box and data cable for continuity.

   If LED D4 on the receiver board still does not flash, 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 if LED D7 on the receiver board is on.

If D7 is on, check if D5 and D6 are flashing and call customer service department.

If D7 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) Look at the digit wiring order table.

(b) Find the first digit in the wiring order that is not working.

(c) Check for 12 VDC at the digit.

(d) Reseat the data in and data out cable connectors.

(e) If the digit still doesn't work call the customer service department.

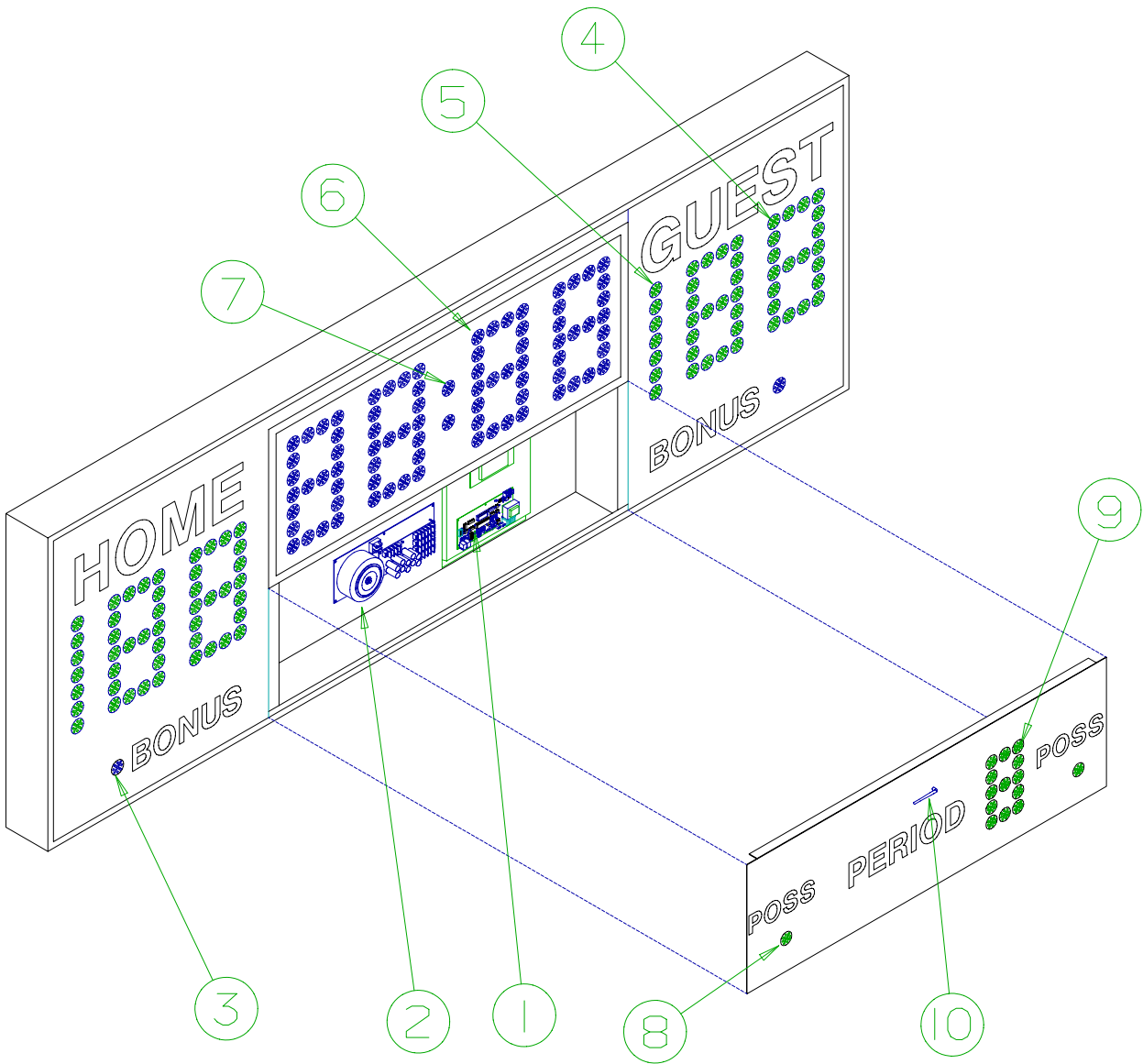# 5. REPLACEMENT PARTS LIST

5.1 Scoreboard Display Parts

1

figure 1

DISPLAY ASSEMBLY

REPLACEMENT PARTS LIST (MP-4209R Basketball)

fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
1-	150826X	Display Assembly		150826X
1-1	XXXXXX	Controller Plate Assy	A2	XXXXXX
		*****SEE DETAIL FIGURE 2*****		
1-2	BL00027P	Power Supply, 200 Watt		BL00027P
1-3	EL00438P	Digit, 2 X 1 Red		EL00251P
1-4	EL00432P	Digit, 4 X 7 Green		EL00245P
1-5	EL00433P	Digit, 1 X 7 Green		EL00246P
1-6	EL00431P	Digit, 4 X 7 Red		EL00244P
1-7	EL00438P	Digit, 2 X 1 Red		EL00251P
1-8	EL00439P	Digit, 2 X 1 Green		EL00252P
1-9	EL00436P	Digit, 3 X 5 Green		EL00249P
1-10	EL00474P	Antenna, 2.4 GHZ External		
1-10A	WI00018P	Antenna Cable, 8' Coaxial		RFX-C8
1-11	119337	Line Filter, Mallory		20VB1
1-12	151627	Cable Assembly, Telehone 24"		151627
1-13	151631	Cable Assembly, Telehone 48"		151631
1-14	703609	Horn, 350N		703609
1-15	150857	Period and Service Panel		150857
	150022	Control Console, MP-4000 Radio		150022
	151684	Slipsheet Pair		151684
	151681	Transmitter PCB Assembly	A1	151681
		***** PROGRAM 4000 TX.541 *****		
	SW005100	Toggle Switch,	S1	SW005100
	EL00475P	Transceiver, 2.4 GHZ Radio		
	EL00473P	Antenna, 2.4 GHZ Internal		
	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 |

5.2 Scoreboard Controller Assembly Parts
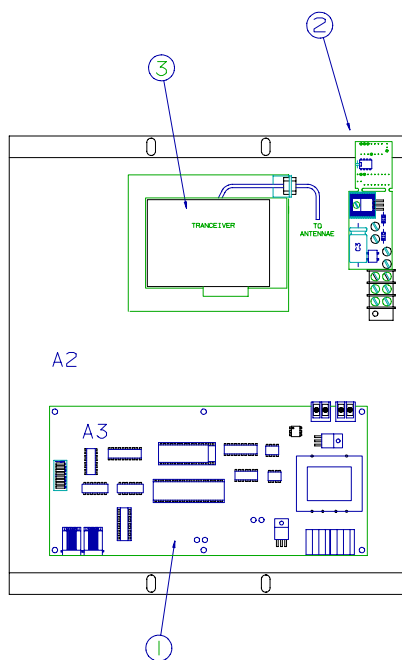
figure 2

CONTROLLER ASSEMBLY

		REPLACEMENT PARTS LIST (MP-4209R) Controller Assembly		
fig.& index	MFG PART NUMBER	DESCRIPTION	REF DES	VENDOR PART #
2-	XXXXXX	Controller Plate Assy	A2	XXXXXX
2-1	EL00351P	Receiver Board Assembly	A2	EL00351P
2-2	151020	Regulator Assy, Adjustable		
2-3	EL00475P	Transceiver, 2.4 GHZ Radio		

15

2-4   705722   Spacer Stand-Off, 3/4"

6. DIAGRAMS

6.1 Control Console Keyboard and Slipsheet Layout
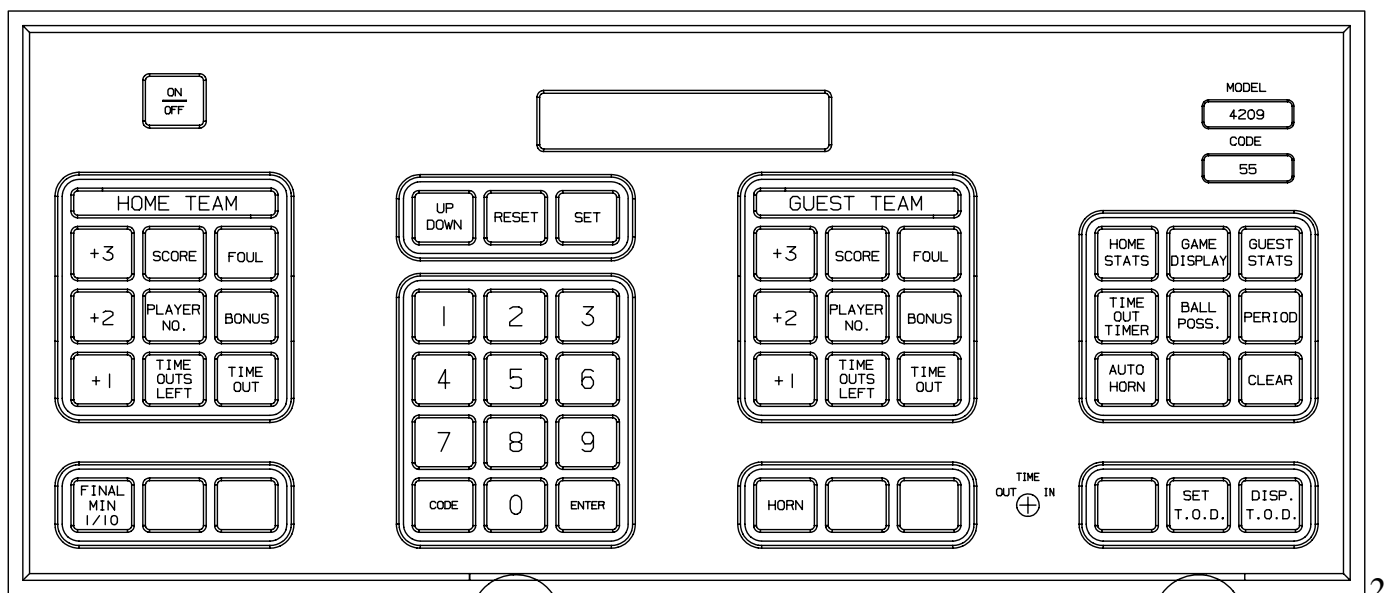
CONSOLE KEYBOARD

6.2 Scoreboard System Layout

SCOREBOARD

POWER SOURCE
120 V / 60 HZ

ANTENNAE

CONTROL CONSOLE

3
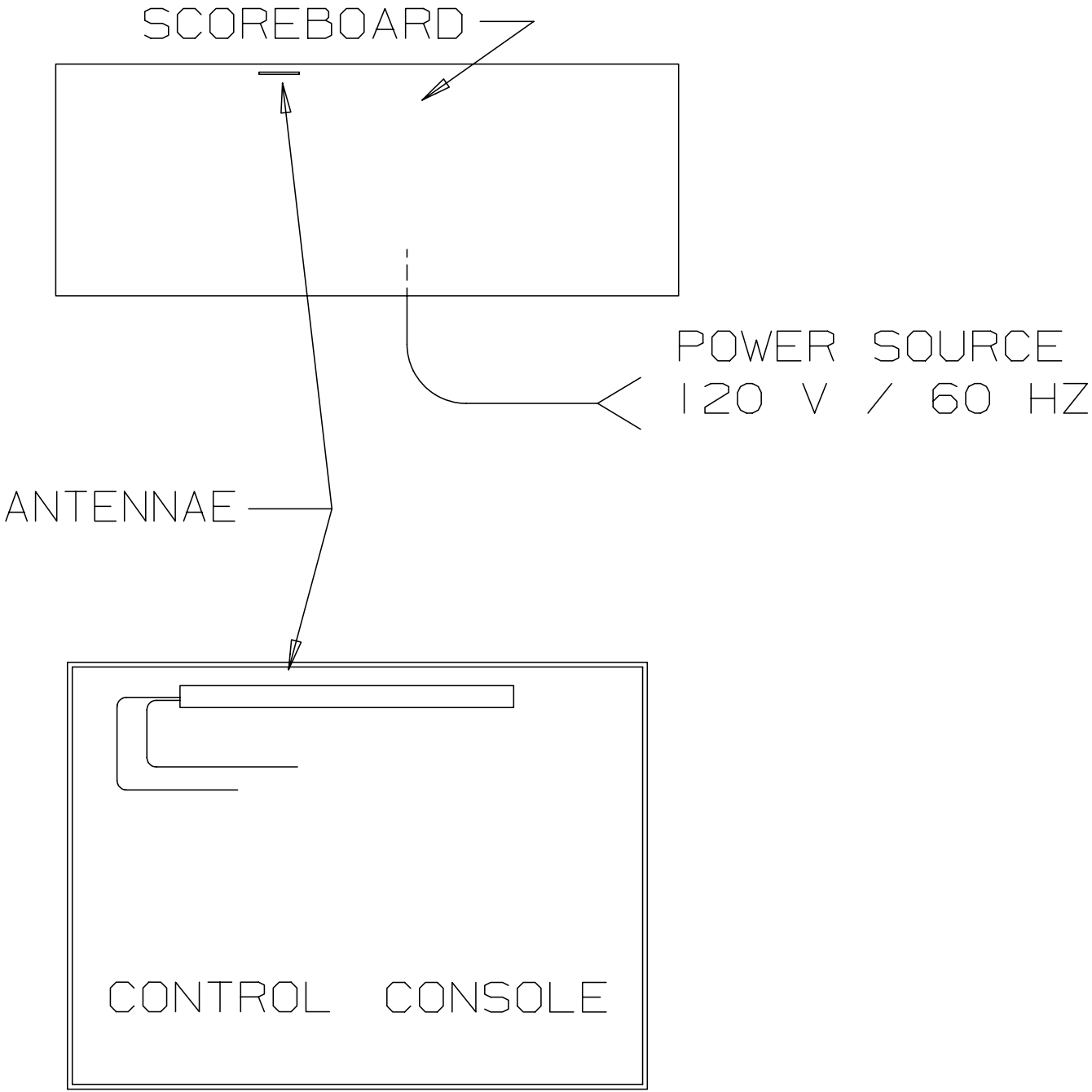
SYSTEM LAYOUT

6.3 Data Cable Wiring Order Diagram

4

WIRING ORDER

6.4 Power Wiring Diagram

PERIOD

5
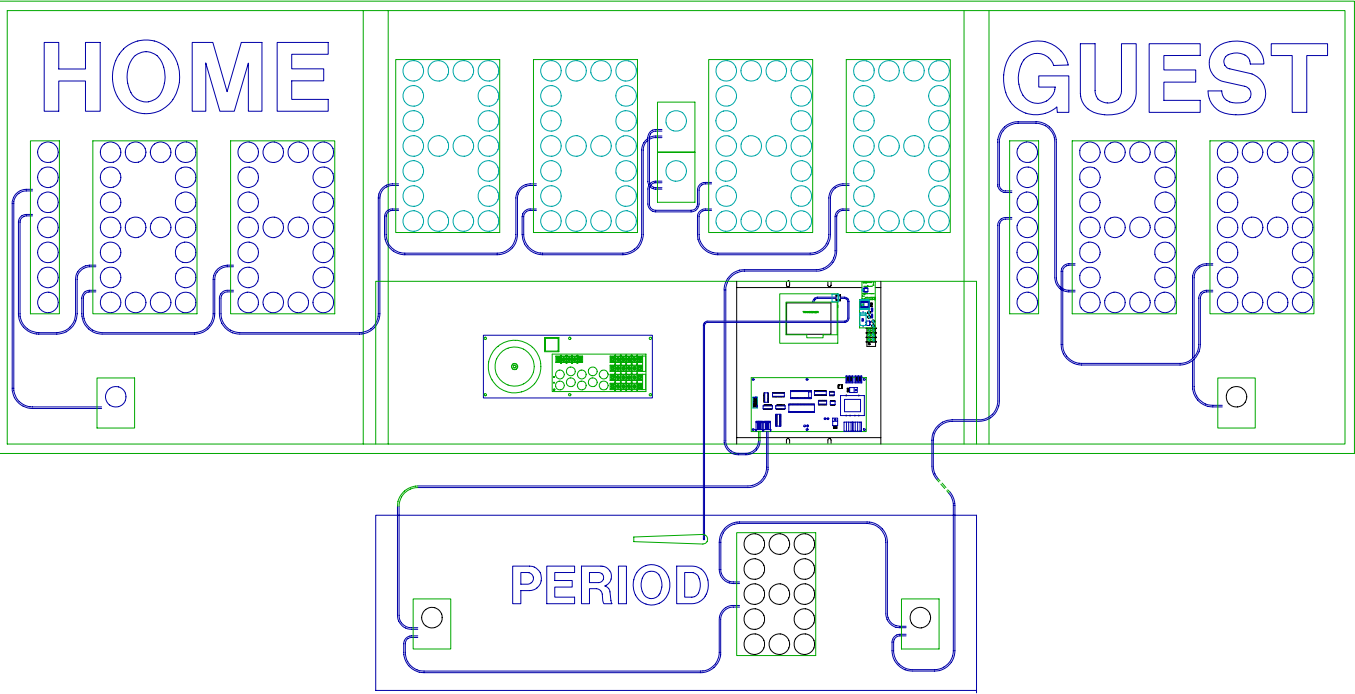
WIRING ORDER

6.5 Power Supply Diagram

```
                              ┌────────┐
           ACTIVE─────────────│  LINE  │── ACTIVE
120 VAC  60 HZ {              │ FILTER │
           NEUTRAL────────────│        │── NEUTRAL
                              └────────┘
```

WHITE   BLACK

POWER SUPPLY

6
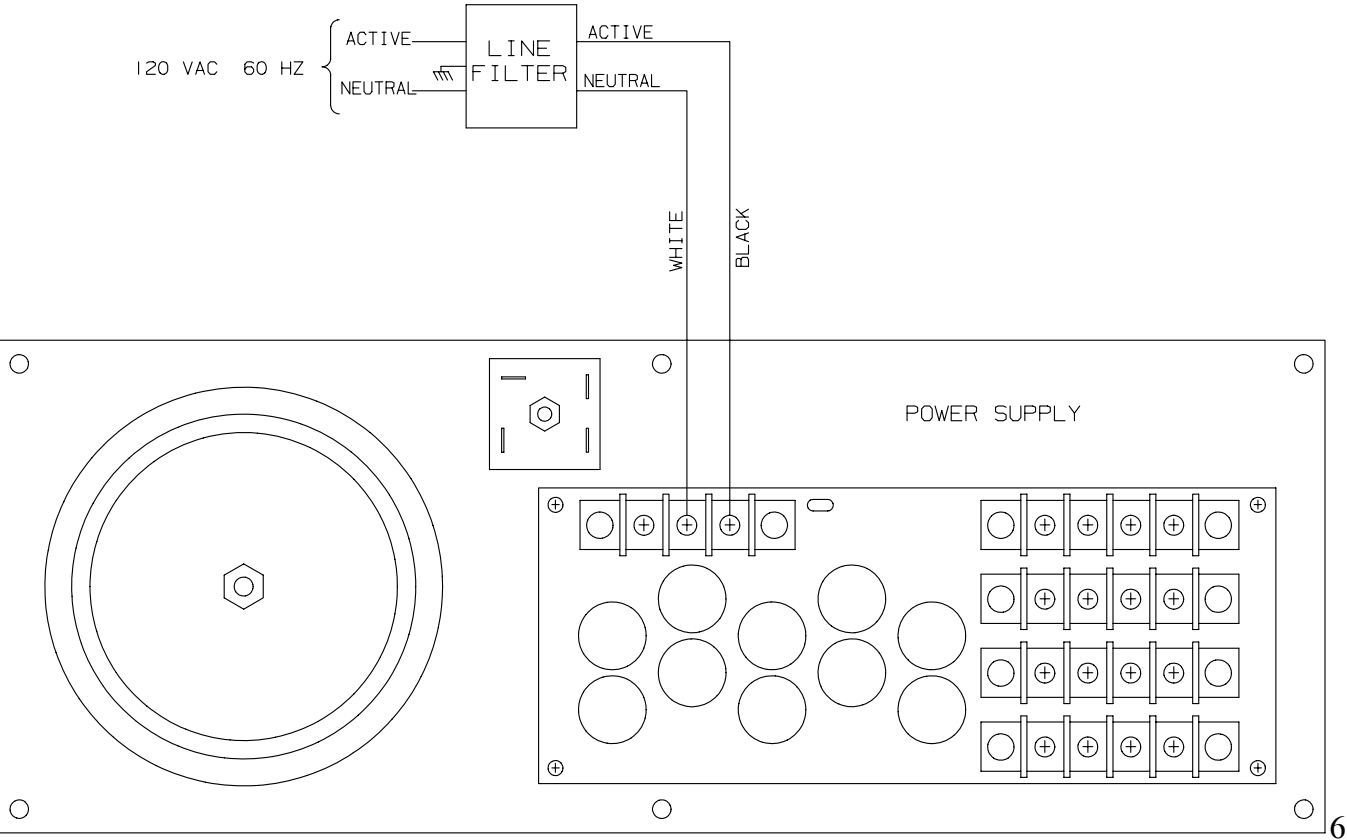
POWER SUPPLY

6.6 Controller Assembly Wiring Diagram

TO
ANTENNAE

TRANCEIVER

GREEN
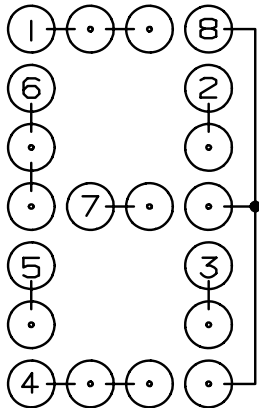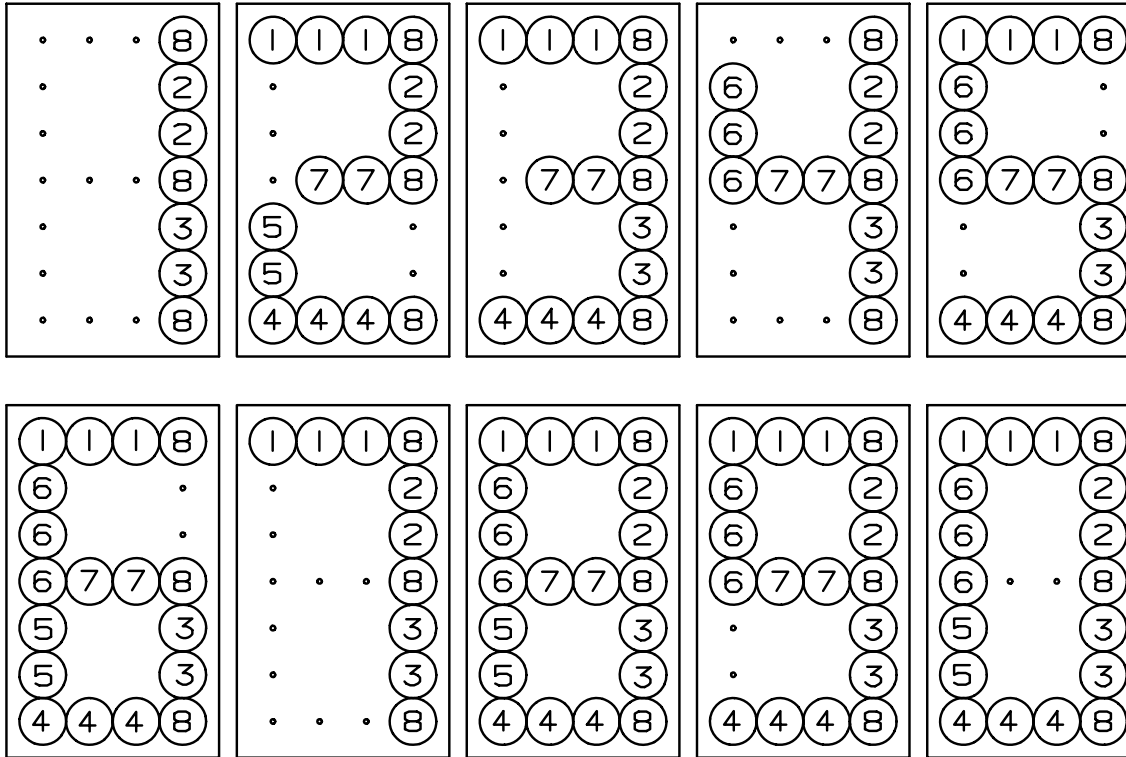WHITE

BLACK

RED

C3

CONTROLLER ASSEMBLY
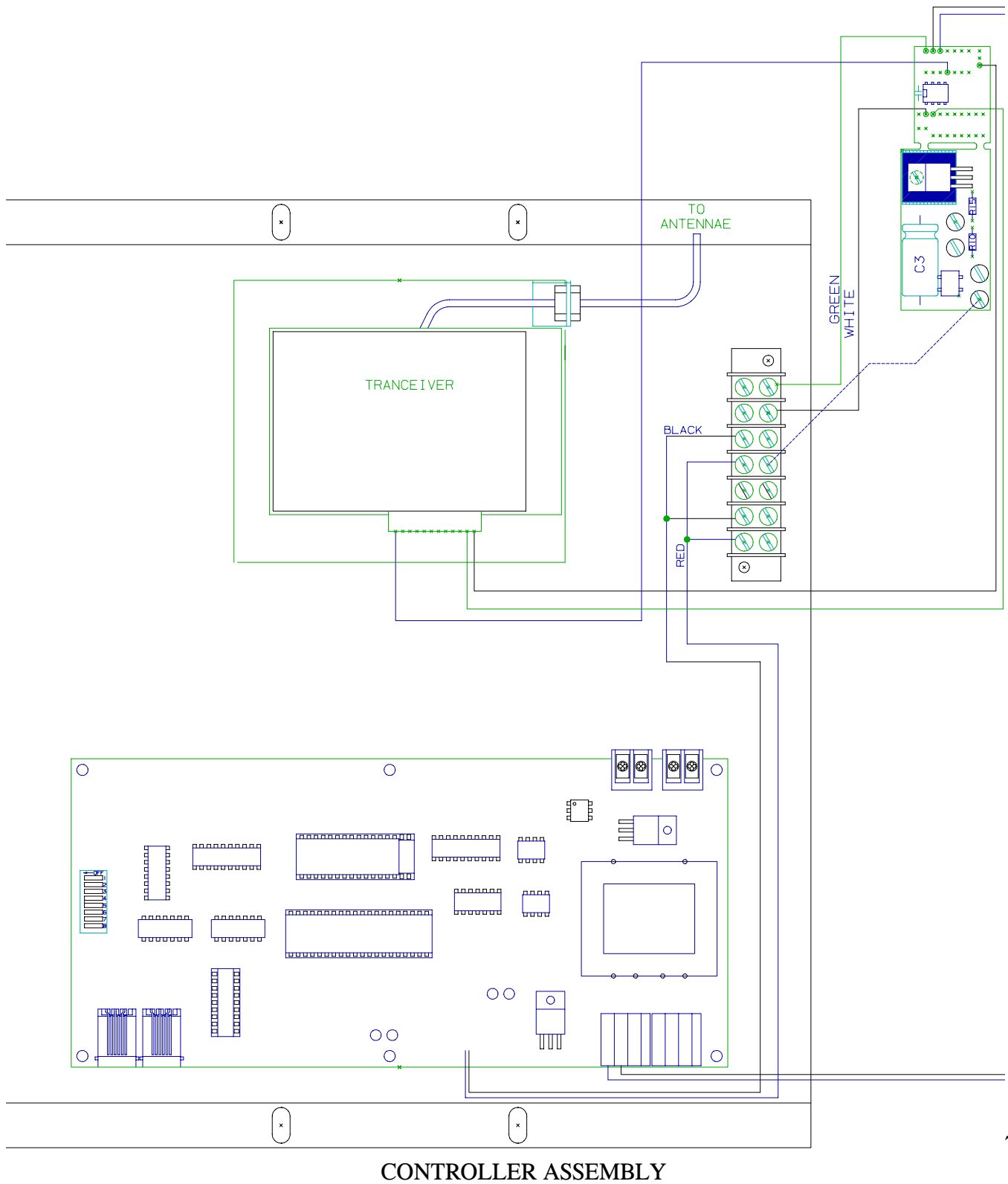
7

6.7 Receiver Board Layout
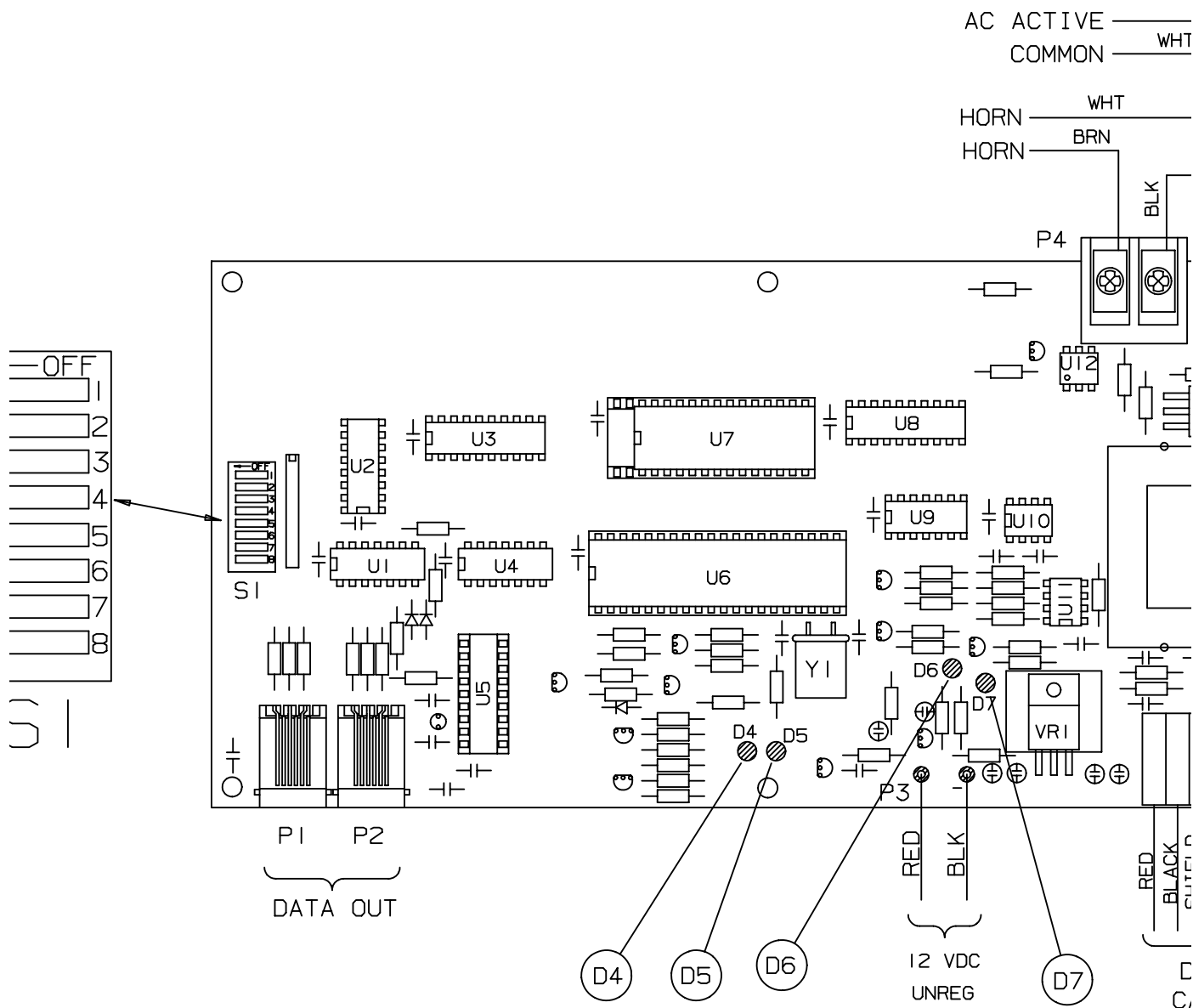
8
Standard settings for DIP switches is all off except for 1 and 2.

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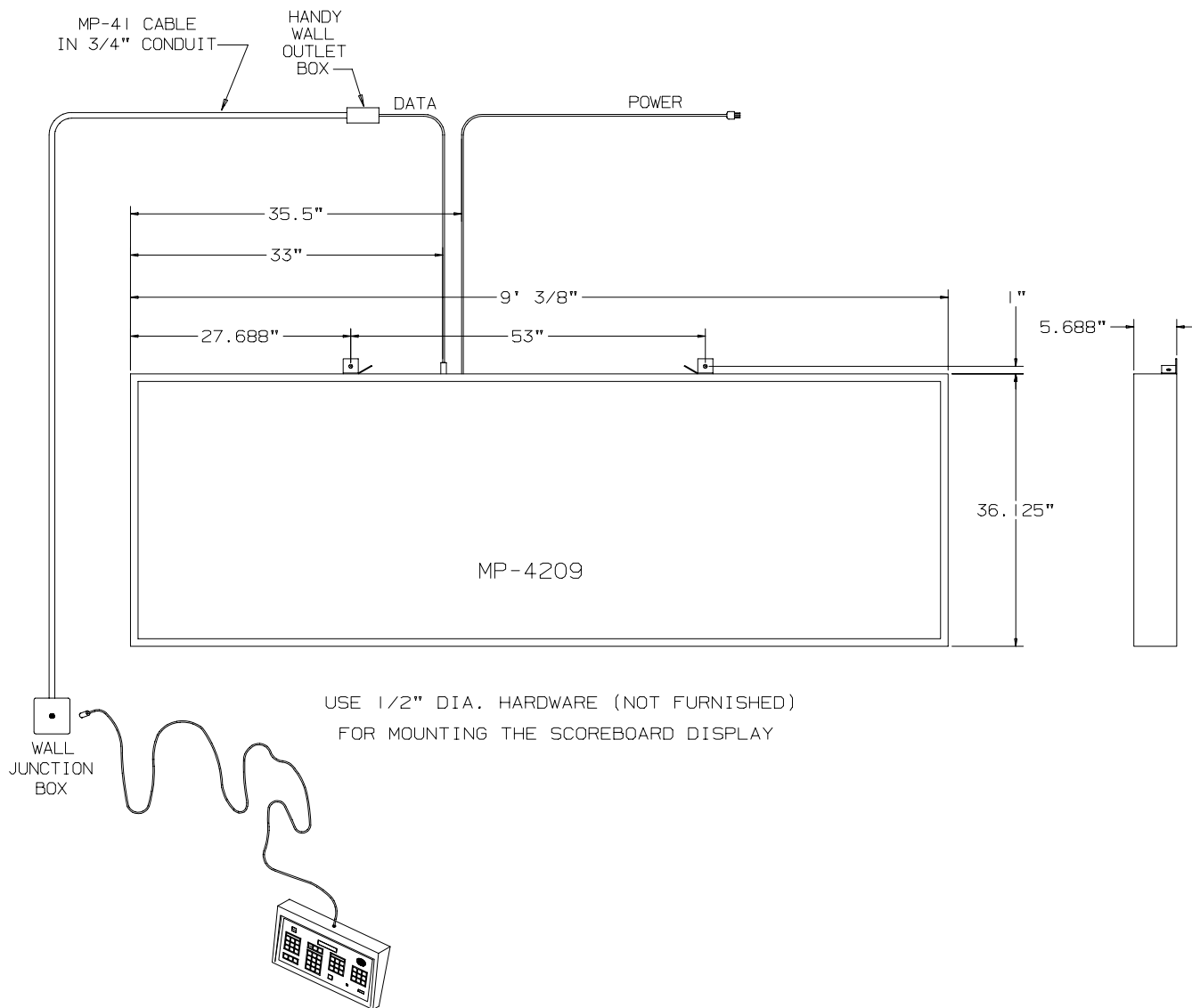
6.8 Microprocessor 4 X 7 LED Pattern (8 Bit)

MICROPROCESSOR 4 X 7 (8 BIT) LED PATTERN

6.9   Installation Drawing

MP-41 CABLE
IN 3/4" CONDUIT

HANDY
WALL
OUTLET
BOX

DATA

POWER

35.5"

33"

9' 3/8"

1"

5.688"

27.688"

53"

36.125"

MP-4209

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

WALL
JUNCTION
BOX

10

INSTALLATION DRAWING