# Chapter 21 Troubleshooting

This section of the Technical Reference Manual provides information on error messages, trouble-shooting and servicing the Model 450 indicator.

## 21.1 Error Messages (overview)

The following is a summary of all of the error messages within the indicator. They are listed below in numerical order. The leading two digits will appear on the numerical portion of the display, and the message will appear on the two lines of dot matrix display. Following each message is a summation of possible causes and probable remedy.

## 21.2 Operational Mode Error Messages

**02 UnderLoad!** Input signal less than negative full scale. If this is due to excessive loading, reduce the load. Otherwise check the load cell connections. If a 4 wire load cell cable is being used, check that the sense jumpers are in place. Verify that the capacity selection **P110** is correct. Use the information parameters, especially **P61100**, to check the setup and input signal.

**03 Over-Load!** Input signal is greater than positive full scale. Use same check as for underload.

**04 # > Dsply** Number to be displayed will not fit within 6 digits. This will not normally occur for the Gross, Net or Tare Weights but may result while displaying the accumulated totals if the amount exceeds 999,999. Either clear the totals or settle for only being able to transmit the totals.

**05 Zero> Max.!** An attempt was made to zero out more than allowed per **P118** selection. Use the **[TARE]** key for subtracting off container weights or if large dead-load is always to be present, apply this dead-load during the No Load? prompt during calibration to permanently eliminate the offset.

**06 Tare>F.S.!** Tare entry was greater than full scale. Most likely the entered tare value was incorrect.

**07 Tare < 0 !** Negative tare attempted, but not allowed per **P162**. For auto-tares, the GROSS Weight must be greater than zero unless **P162** is changed to allow negative tares.

**08 CheckConn.** This message is displayed if the signal into the A/D is +/- 2 times the Full Scale signal. This is effectively taken into consideration when the information sent to the micro processor from the A/D is +/- twice the allowable F.S. reading.

ie. P110 F.S. = 100

Error message will be displayed at +/- 208 taking into consideration the 4% overload.

## 21.3 Setup Mode Error Messages

**10 Entry>Max!** An entry was made which had more characters than allowed. The most likely cause in a model 450 would be entering more than 242 characters into the input interpreter table. Certain parameter setups will also display this message if the entry exceeds the specified range of selections.

**11 WRONGCODE!** The incorrect access code was entered, thus preventing changes. In order to access the Setup Mode, either the proper code must be entered or the **[ENTER]** key must be pressed alone (to

view selections without making changes).

**12 No Mods!** The Setup Mode is being accessed, but changes are prevented.

**13 OutOfRange** An entry made for a selection was beyond the range of valid choices.

**14 Must Keyin** The choice for the current parameter must be keyed in.

**15 Size>998 !** Custom The size of one of the Transmit setups has exceeded the limit.

**16 CHECK JUMPR** A programming operation was attempted when the program jumper is installed. Installation of this jumper will prohibit any programming changes.

**17 A/D BAD!** The processor has detected a problem with the A/D chip (U9). Several situations could cause this error message to be displayed. The most severe situation would be a damaged or defective A/D. In this case it will have to be replaced. Several less severe or minor problems will cause the same message to be displayed. These instances along with a possible solution are listed below. U9 on PC792A thru PC792B and PC800A thru PC800B boards is located in an RFI protective can mounted on the board. A small screwdriver used properly will allow access the the device. The A/D on PC777A thru PC777C boards is an easily accessible/visible component on the main board.

**Loose chip:** Simply re-seat the chip in U9 by gently pushing down on it.

**Wet/damp:** The unit was water damaged or is simply in a damp environment and condensation has built up on the A/D and is shorting the component. A heat gun or common blow dryer used ***carefully*** will sufficiently dry the area.

## 21.4 Hardware Problem Error Messages

**20 Deflt A/D** This message is displayed for 1 second. It will be displayed if the A/D calibration data is gets corrupted by whatever means. When the information modes are accessed (P61100) the message will be displayed for 1 second and P61113 - 16 are defaulted to a factor of 1. This message will also be displayed on power-up if the check-sum for the A/D data are corrupted. P61113 - 16 are also reset to a factor of 1.

**21 EEROMerror** Error reading data from the EEPROM. Possible U6 problem.

**22 EEROMerror** Error writing data to the EEPROM. Possible U6 problem.

**23 CheckU6** Supplementary error message for above errors.

**24 EEROMFull!** The setup being attempted requires more EEPROM than is currently installed.

**25 DefltSetup** Upon power-up the indicator has not found the proper codes. Therefore all

parameters have been reset to factory default values.

**26 Bad Setup** The stored data has a checksum error. Check all parameters or re-load setup.

**27 RE-BOOT!** The indicator cannot use the EEPROM for data storage, so it is attempting to power-up again to cure the problem.

**28 NoRAMAVAIL** The current setup requires more RAM than is currently installed. Either contact your dealer or the factory.

**29 PIN error** This message will appear on power-up or setup if the $E^2$ is corrupted in the PIN section. Check $E^2$ for problems. The access code is then defaulted to the factory (GSE) access code. Also refer to Error 11.

## 21.5 Calibration Error Messages

**30 F.S.>MAX!** The entered calibration weight, together with the currently applied signal, indicates that the full scale signal will be greater than the allowed maximum of the indicator. Verify that correct entries have been made for the capacity, **P110**, and for the calibration weight. If all appears correct, refer to the use of the information parameter **P61100**, and determine the output (in mv / volt) of the connected load cell.

**31 F.S.<.1mVv** The entered calibration weight, together with the currently applied signal, indicates that the full scale signal will be less than the allowed minimum of the indicator. Verify the proper entries for the capacity, **P110**, and for the calibration weight. If all appears correct, refer to the use of the information parameters, **P61100**, and determine the output (in mv / volt) of the connected load cell.

**32 ADD MORE!** The applied weight during calibration was less than 0.1% of capacity. More weight than this is required. Refer to **P61100** if this is incorrect.

**33 ReCALReq'd** The just completed calibration is insufficient to guarantee accurate results due to either the cal weight being less than 5% of capacity or this was the first calibration of this platform to therefore the indicator and adjusted by coarse gain was the indicator.

**34 RES> 25K!** The current combination of capacity **P110** and increment **P111** result in a resolution greater than 25,000 graduations. This is simply a warning in case this was not intended.

**35 RES>100K!** The current combination of capacity **P110** and increment **P111** result in a resolution greater than 100,000 graduations. This is not allowed and as soon as any key is pressed the instrument will jump back into the setup mode to parameter **P110** to verify the settings.

**36 RES< 100!** The current combination of capacity **P110** and increment **P111** result in a resolution less than 100 graduations. This is simply a

warning in case this was not intended.

**37 RES< 1 !!** The current combination of capacity **P110** and increment **P111** result in a resolution less than 1 graduation (i.e. the increment is greater than capacity). This is not allowed and as soon as any key is pressed the instrument will jump back into the Setup Mode to parameter **P110** to verify the settings.

## 21.6 General Error Messages

**99 Can't Set!** An attempt to enter a value for a parameter which is not field changeable, such as the serial numbers or the audit trail counter results in this message.

**- - Cksumerror** Upon each power-up, the indicator tests the integrity of its EPROM. If the result is not correct this message is displayed and the indicator is not usable. Verify that the EPROM (U4) is installed properly (no bent over pins). Reseating the EPROM might take care of the check-sum error.

## 21.7 Miscellaneous Messages

**- - EntryError** This error message is the most commonly used. The primary causes are entering a value preceding a key (such as **[ZERO]**) which is not allowed, entering alpha data for a numeric selection, or entering a fractional value for an entry which only accepts whole numbers. This may occur while in the Setup Mode or one of the operational modes.

## 21.8 Communications Error Messages

**par'y error** This indicates that the parity of a received character did not match the parity specified in the Setup Mode, parameter P202. This could also result if the baud rate (P200) or the number of data bits (P201) are incorrect.

**ovrun error** This indicates an over-run error where an additional character was received while the receive buffer of the 450 was full, and thus the extra received character will be lost.

**frm'g error** This indicates that the stop bit of a received character did not occur when it was expected. This could be the result of an incorrect baud rate (P200), incorrect number of data bits (P201), or incorrect parity setting (P202).

**port error** This indicates that the 450 did not check its receive data register in time, thus missing a character. If this error should occur, please notify your GSE dealer or the factory. To prevent the problem, try reducing the baud rate (P200).

**tx on hold** This will occur if a data transmission is held up for two seconds of more due to a de-asserted handshake. Refer to the description of parameter P209 for more information.

**tx abort** This occurs if the **[CLR]** key is pressed when the tx on hold error message is shown

| | |
|---|---|
| | or if P209 is set for abort and the transmit buffer becomes full. |
| **tx con'd** | This will appear briefly when the handshake is re-asserted after the tx on hold message occurs. |

## 21.9 Setpoint Error Messages

Setpoint errors will occur if there is a conflict with the way the parameters are selected in the setup mode. The setpoint setup is located at parameters 5100 thru 5115. The **XX** in the error message below will be replaced with a number associating it with the last two numbers of the parameter with the invalid setting.

**SPtXX**
**Error**

**example #1**
Parameter P51**11** is the setting for initiating the method by which the setpoint will be activated. The method could be automatic, remote key or the Tare key. The error **11** indicates that the method to initiate setpoint 2 is identical to setpoint 1. *This is not valid*. Both setpoints cannot be initiated via the same method.

**SPt11**
**Error**

**example #2**
Parameter P51**09** is the setting for the preact**2** value. This value cannot be greater than the preact**1** value. The error **9** indicates that there is a conflict between the two preact values.

**SPt 9**
**Error**

## 21.10 Service

There are no user-serviceable items in the GSE Model 450 indicator! Service must be performed by qualified service technicians only! Attempts to service this instrument by unqualified personnel may void the warranty!

## 21.11 Swapping the A/D Converter

If a 450 develops a problem that appears to be related to the A/D converter, it may become desirable to swap an A/D from a working indicator to the indicator with the problem.

If this is done and the problem seems to be cured, then the calibration data for the A/D should be transferred from the indicator which the A/D was taken into the indicator where the A/D now resides.

Alternatively the A/D calibration procedure may be performed on the indicator with the replacement A/D converter.

In order to transfer the A/D calibration data from one indicator to another, simply write down the values shown on the display for parameters P61110 through P61122 on the indicator that the A/D was taken.

If it is desired that the indicator that received the replacement A/D maintain its calibration to a scale base, then next write down the values displayed at P61105 and P61107 on that indicator.

Next enter the P61110 - P61122 values recorded from the scavenged 450 into the 450 being repaired.

Finally, again if the scale base calibration is to be maintained, re-enter the values previously recorded for parameters P61105 and P61107.

## 21.12 Trouble-Shooting

**DATA TRANSMISSION:** If a data transmission of any weight-related numeric data such as Gross, Net or Tare, is sent as dashes, an overload or underload (negative overload) condition was in effect. Remove the cause of the overload (or underload) and repeat the transmission. Check also the setup of parameters **P204** and **P209**.

**DISPLAYED WEIGHT:** If an overload or underload occurs due to an electrical overstress (EOS) normally due to lightning or ESD discharge, then press the **[CLR]**

key. The message "wait 1" will appear for about 1 second. The A/D converter will then be reset and the system should again be functional. If not, power down for a few seconds. If the indicator still does not work properly after power-up, check the load cell or platform wiring. If okay, permanent damage may have occurred, most likely at U9, the A/D converter. The instrument amplifier is built into the same chip with the A/D, this portion of the device could be faulty.

**Component Layout:** Refer to Figures 21-1 through 21-4 Main Board Component Layout for specific board versions.

## 21.13 Test Resolution

Pressing two keys simulateneously would cause the displayed weight's increment to be 1/10th its normal value for about 5 seconds.

The **[PRINT]**+**[SELECT]** key pressed simultaneously on M450 will produce a "%x" code which activates the extended resolution mode. (Use [ALT-D] on the simulator.)

On the M455, key in **[99][SELECT]** to display the weight to x10 extended resolution.

Note: The numeric display can only support 5 decimal places, therefore, if the normally displayed decimal place is already five digits after the decimal, then the extended resolution feature will not work.

**CAUTION!**
Servicing procedures must be performed by qualified service technicians only! Attempts to service this instrument by unqualified personnel may void the warranty!

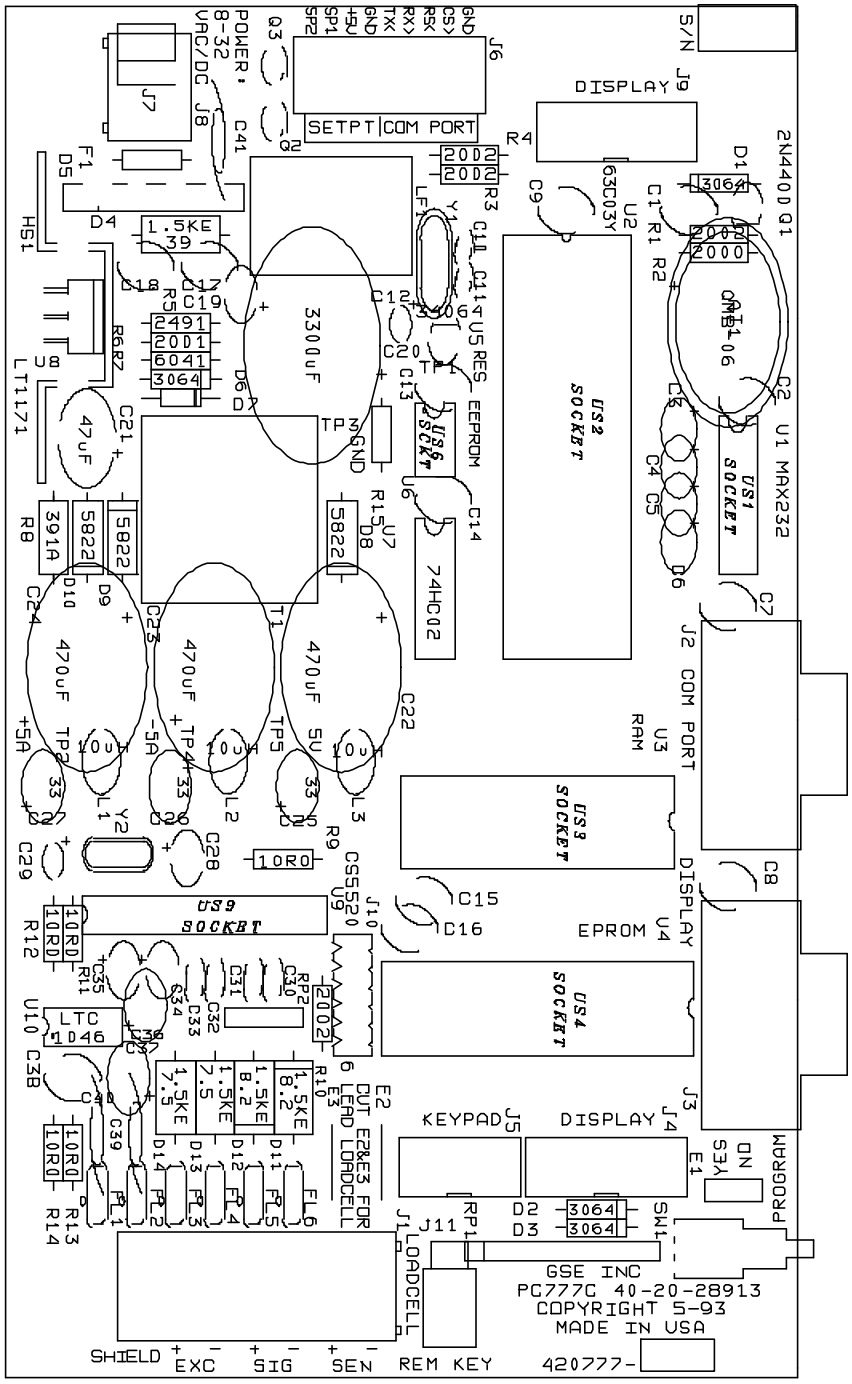


*Figure 21-1 Main Board PC777C Component Layout*

**CAUTION!**
Servicing procedures must be performed by qualified service technicians only! Attempts to service this instrument by unqualified personnel may void the warranty!

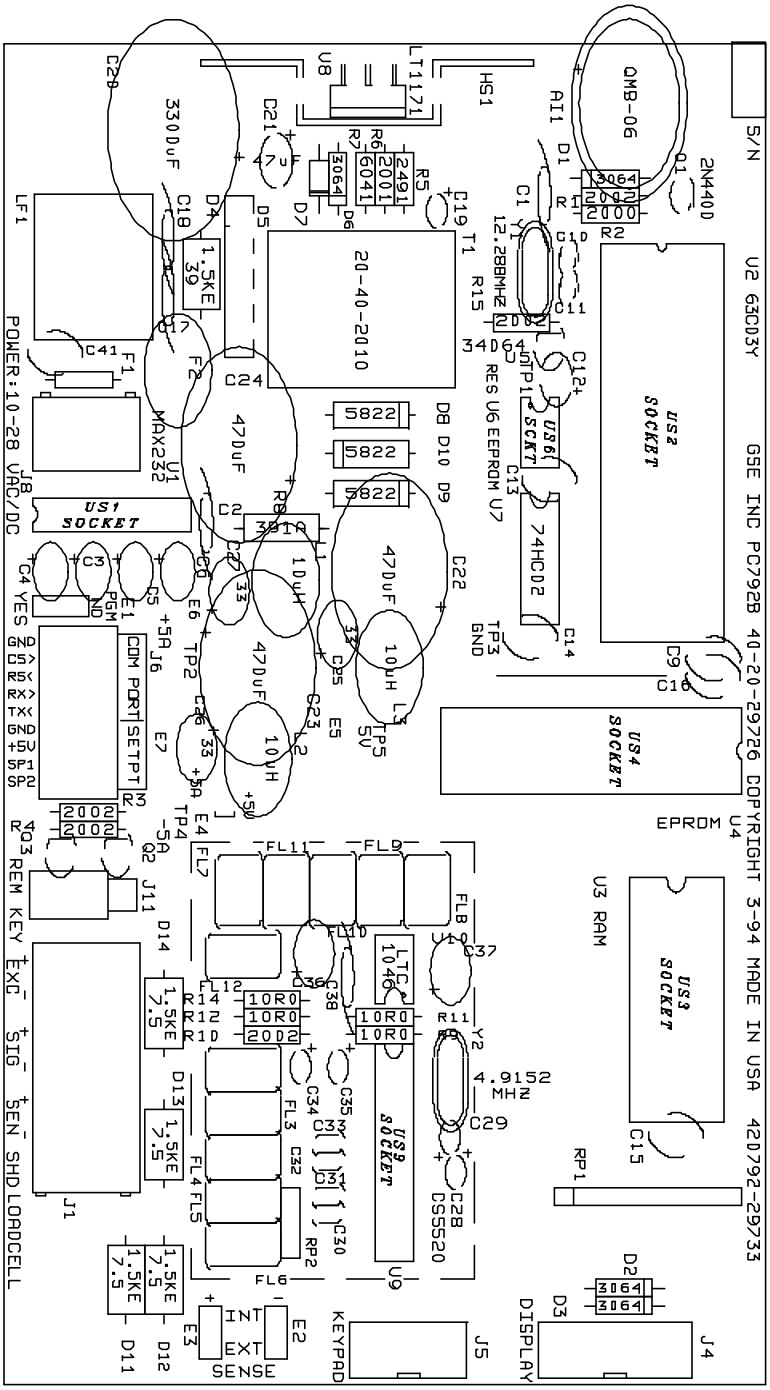


*Figure 21-2 Main Board PC792B Component Layout*

**CAUTION!**
Servicing procedures must be performed by qualified service technicians only! Attempts to service this instrument by unqualified personnel may void the warranty!

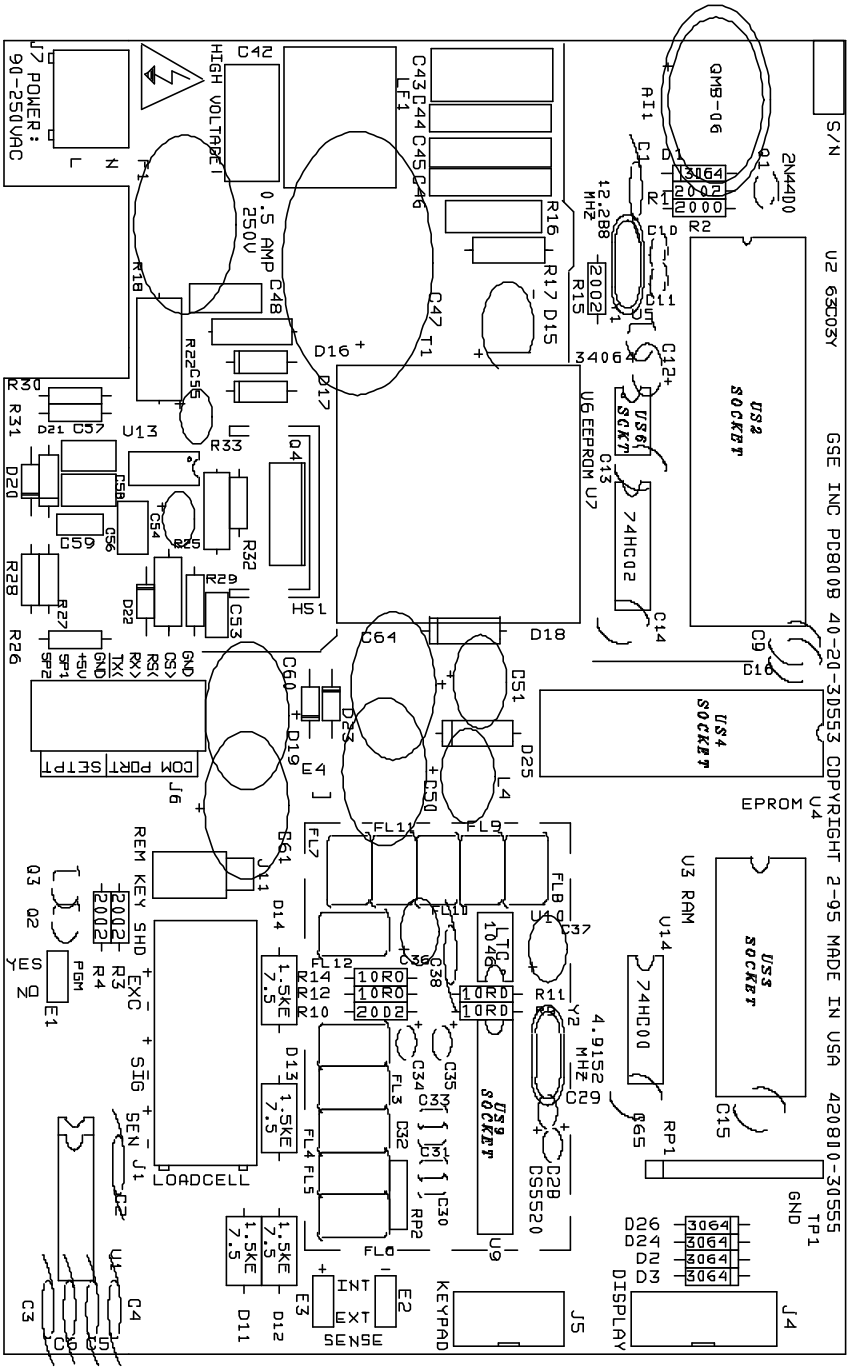


*Figure 21-3 Main Board PC800B Component Layout*

**CAUTION!**
Servicing procedures must be performed by qualified service technicians only! Attempts to service this instrument by unqualified personnel may void the warranty!

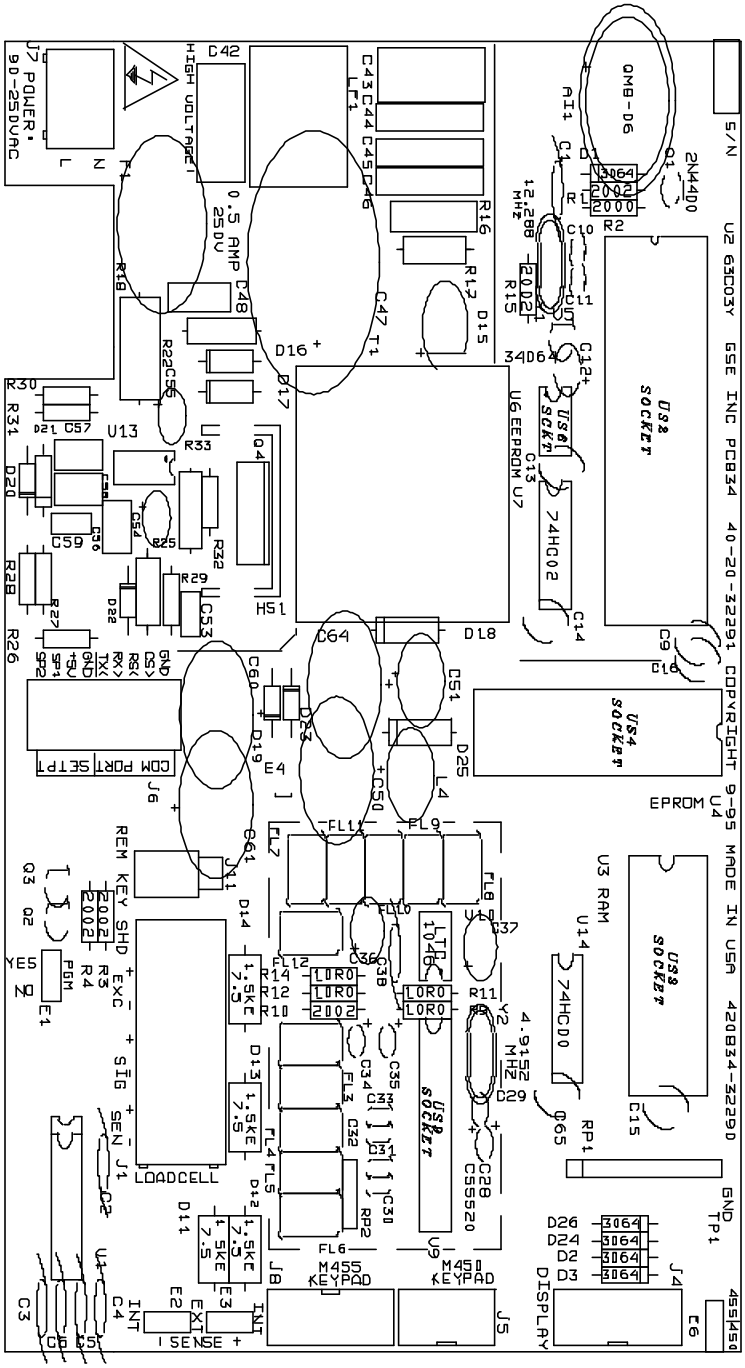


*Figure 21-4 Main Board PC834 Component Layout*

21