

Appendix 1

INTRODUCTION

Despite the simplicity and self-correcting attributes of the 289H-M LSS, there may be times when you will want to know how the system is set up, when to run diagnostic tests, or how to interpret PressureMAP's System Dispatches. This appendix section addresses those concerns. Among the topics presented in this section are the following: basic troubleshooting, diagnostic testing, and 289H-M error messages.

TROUBLESHOOTING

Like the 289H LSS, the 289H-M has proven to be relatively trouble-free, there are certain conditions that may require your attention. Several of the possible situations are listed below, along with possible solutions to each condition or problem. In addition, flowcharts outlining steps for diagnosing equipment problems are available in hard copy upon request:

- 289H LSS Troubleshooting (2560601.*HD)
- High Resolution TD Troubleshooting (2530601.*HD)

If the problem persists after following the instructions given, please contact the System Studies Technical Support Department.

Possible Error Conditions

- **The 289H-M is not answering.**
 1. Before removing the front cover of the 289H-M LSS, check to see that the power supply indicator light on the front of the monitor is lit.
 - ❖ If it is not, remove the front panel and set the ON/OFF switch, located in the front right corner of the top circuit board, to the ON (left) position.
 - ❖ If the 48 volt power-on LED is still not on, check that a filtered source of -48 volts DC and ground is applied to the power connector. Also make sure that the 289H-M is properly grounded as explained in Section 3 of this manual.

Please refer to Section 2 of this manual for an explanation of 289H-M power requirements. Note that the power-on LED is the small LED to the left of the ON/OFF switch, shown in FIGURE A1-1. (The Utility Card shown in FIGURE A1-1 is the older, "non-tone" model.)

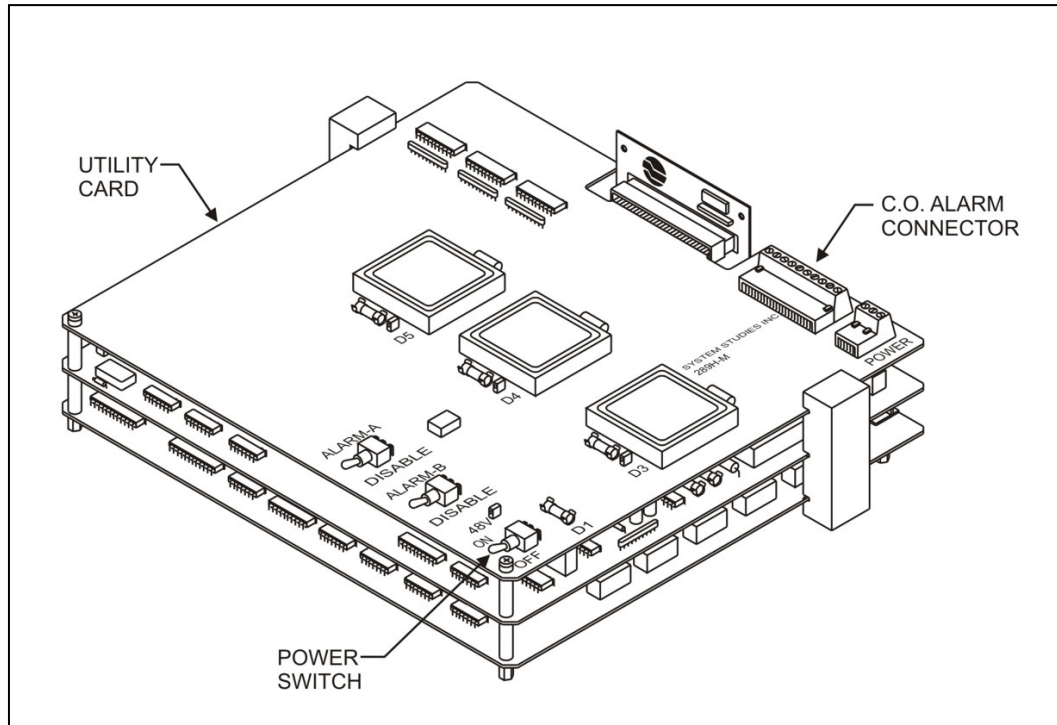


FIGURE A1-1: 289H TONE UTILITY CARD

- ❖ If there is still no light on the Utility Card, the main fuse on the card may be blown. Check to see that the thickness (gauge) of the -48V power conductors is in the range of 18 to 22 gauge. If the gauge is thinner (the gauge number is higher), then the main fuse may blow at power-up due to in-rush currents.
2. Are the 3 LEDs in the middle of the Utility Card near the power source fuses on (lit)? On the standard Utility Card (FIGURE 5-3 in Section 5 of this manual), they are identified as D3, D4, and D5. On the Tone Utility Card (FIGURE 5-4), they are identified as D3, D4, and D11.
 - ❖ If any one of these is out, the corresponding fuse is blown or the power supply is faulty. In this case, either the fuse or the card itself needs to be replaced.

If any of the fuses and/or the card needs to be replaced, you can follow the procedures for card and fuse replacement located in Section 5 of this manual, or call System Studies Technical Support.

3. Is the number assigned to the phone line used with the 289H-M LSS the same as the one entered into the PressureMAP Office Information Screen for this office? Or if the 289H is using a network connection, does the LAN Controller Card's programmed address match PressureMAP's office information?
 - ❖ The phone number/IP address in PressureMAP office information can be checked and/or corrected using the PressureMAP Data Entry Editor.

- ❖ To change the LAN Controller's IP address information, follow the procedures for LAN Controller setup in the Start-up & Test Procedures section of this manual.
4. Are the modem indicator LEDs for HS, TR, and DSR on the Controller Card on? These LEDs, along with several others, are visible on the 289H-M's middle card. On the older Controller Card, the LEDs are located to the right of the line connector module (as viewed from the back of the chassis—see FIGURE A1-2). On the newer card, the modem LEDs are located closer to the front of the card, and a visual key, identifying each LED, is silkscreened on the card's front edge.

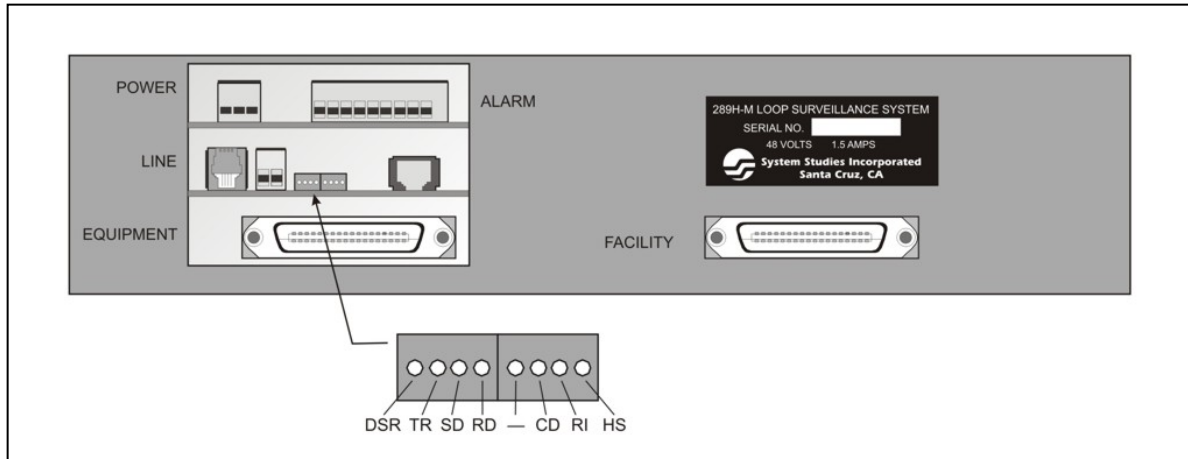


FIGURE A1-2: 289H CONTROLLER CARD MODEM LIGHTS

- ❖ If all three LEDs are NOT on, reset the 289H-M by using the power switch on the top card, to power off and then on again. (Wait approximately one minute after powering off to power back up.) If the Controller Card's modem LEDs still do not light, the card may need to be replaced.

Please call System Studies Incorporated if you need to exchange the Controller Card.

5. Does the RI light on the Controller Card blink at each ring? This LED is the second one from the far right of this middle card, when viewing the chassis from the back (FIGURE A1-2). Using a standard phone, dial into the 289H-M directly.
- ❖ If the light does not blink, either there is no phone connection (bad line) or the phone number is incorrect.
 - ❖ If the light blinks but the 289H-M does not answer, the Controller Card needs to be replaced.
 - ❖ If the 289H-M answers but does not communicate with PressureMAP, there could be a faulty connection at the RJ-11 modem connector.

If the card needs replacement, call System Studies Technical Support.

- **All devices on a relay card are not reading, or they are giving incorrect readings.**
 1. Is the card seated correctly in the 289H-M chassis?
 - ❖ Run Diagnostic Test 1, System Configuration. Please refer to Appendix 5 of this manual or CPAMS Diagnostics, Section 8 of the *PressureMAP System Operations Manual*, for information on the diagnostic test. Check the *Inventory* field of the configuration screen, verifying that the relay card in the 289H-M is correctly identified in *Inventory: Slot #1*. If the card is not listed in Slot 1 on the screen, call System Studies Technical Support.
 - ❖ If the chassis is equipped with a SPDR card, verify that the correct configuration setting is indicated in the Inventory field. (The standard configuration for the 289H-M is “A”—i.e. SRA.) If the configuration is incorrect for the Sparton block connected to the 289H-M monitor, follow the procedures for configuring the SPDR’s settings in Section 4 of this manual (page 4-7).
 2. The newer relay card models require that the Controller Card’s EPROM version supports that relay card model. For the special-application SPDR relay card, the EPROM must be one of these versions or higher: Rev. C07, D04, E04, F03 or G03.

EPROM versions, compatibility requirements and capabilities are described in Release Note 68 (2570701.*HD), which is available on our website (www.airtalk.com) and in hard copy. To verify that you have the most current information, please contact System Studies Technical Support.
 3. Check the card for correct wiring to the field. Please refer to Section 4 of this manual for wiring information. If there are still incorrect readings, the associated connector block may be wired incorrectly.
 - ❖ Run Diagnostic Test 6, Ping Relays Test. Please refer to 289H Diagnostics, Appendix 5 of this manual, for information on the diagnostic test. If only some of the relay pairs fail, and they were not busy, or if none of the relays on the card can be addressed, it may be necessary to replace the card.
 - ❖ If one or more pairs consistently give an OPNI indication, check to see if the ring side of the pair is grounded. If so, remove the ground. If the pair is not grounded and is still giving an OPNI reading, then the card may need to be replaced.

If the card needs replacement, call System Studies Technical Support.

DIAGNOSTIC TESTING

The 289H-M has several diagnostic tests for internal monitoring. You can initiate these tests by running the CPAMS Diagnostics portion of the MAP Programs. The procedures for running these tests are presented in Appendix 6, the 289H-M Diagnostics section of this manual.

The following information indicates when running a diagnostic test will aid in the troubleshooting of suspected monitor problems.

- **What is the current status of the 289H-M LSS?**
- **What slots are filled and which cards are in the 289H-M LSS?**
- **Is the 289H-M LSS correctly terminating calls?**

Run Diagnostic Test 1, System Configuration. After the test is completed, a screen will be displayed showing the status of the following fields.

- ❖ *LSS Engine* indicates that the test is being performed on a 289H.
- ❖ *Version* is the version of the 289H-M firmware in firmware/patch format.
- ❖ *Password* indicates whether the login password is set or reset.
- ❖ *System Reset* indicates whether the 289H-M has gone through a reset since the last time the System Call command was issued.
- ❖ *Exit State* indicates the state the protocol processor was in when an end of session was detected during the last call. Normal Exit State is WAIT SOH.
- ❖ *Exit Status* indicates how the last session ended.

Normal Exit Status readings are NORMAL TERMINATION, USER ABORT, and HUNGUP.

RETRY EXCEEDED, PREMATURE TERMINATION, RECEIVED DATA, NO RESPONSE, ASYNC PROTOCOL RECEIVED, or DCD LOST may indicate a problem.

OUT OF SYNC or BAD RESPONSE together with no readings indicates a problem. If any of these messages displays, please call the System Studies Technical Support Department for assistance.

- ❖ *Inventory* contains a table showing what type of cards are loaded in the various slots of the LSS monitor. For the 289H-M “mini” chassis, only line 1 will be populated. SUB represents a subscriber card; DED identifies a dedicated card; SRA represents the proper configuration for Sparton Dedicated Replacement Card used in a 289H-M monitor. A blank space indicates that no card is present in that slot. UNK is displayed if the card is not recognized; it indicates that the card is either not seated properly, is possibly defective, or is not supported by the system’s version of PressureMAP.

If no cards show up in the inventory, call System Studies Technical Support.

- **Is the CO battery voltage level correct?**
- **Is the 289H out of calibration? (PressureMAP error message 564)**

Run Diagnostic Test 2, Calibration Test. After the test is completed, a screen will be displayed showing the status of the following fields.

- ❖ *Resistor* field indicates which calibration resistor was being tested.

- ❖ *Counts* are the raw counts from the ADC as returned by the 289H-M. This information is useful to System Studies Technical Support personnel.
 - ❖ *Volts* applies only to the battery calibration resistor and indicates the voltage of the CO batteries minus 0.7 volts.
 - ❖ *Ohms* indicates the electrical resistance of each calibration resistor. The value in this field should be very close to the resistance implied in the name. For example, a 3.8 megohm calibration resistor could read 3.937M. A field with all pluses and a “M” for megohms (“++++M”) indicates a number whose magnitude is too great to fit in the field.
 - ❖ *Correction* is the percentage difference between the theoretical resistance and the computed resistance. PressureMAP corrects readings using the calibrated values, resulting in less than a 1% error for a reading. Differences greater than 10% between the theoretical and computed resistances are reasons for concern.
- **Did the last PressureMAP call correctly read a device?**
 - **How do you calibrate a transducer?**

Run Diagnostic Test 3, Realtime Reading Test. Realtime readings are displayed continuously until an <Esc> is entered. The screen that is displayed shows the status of the applicable fields:

- ❖ *Type* represents the second letter of the device type (for example, “F” for a flow device).
- ❖ *Counts* are the raw ADC counts returned by the 289H-M. This information is useful to System Studies Technical Support personnel.
- ❖ *Scaled* shows the scaled counts based on the calibration. This information is also useful to the Technical Support personnel.
- ❖ *Ohms* indicates the resistance calculated from the scaled counts.
- ❖ *Range* indicates which range of the measurement circuit was used for the measurement (“H” = high range, “L” = low range). The high range is used for measurements above 100K ohms.
- ❖ *Step* represents the approximate step number of a 20 step transducer. A reading of 100k ohms is step 1 and 3.8M ohms is step 20. A reading below step 1 displays as 0, and a reading above step 20 displays as ++.
- ❖ *Milli-Amps* shows the electrical current output calculated from the data in the Counts field.
- ❖ *Delta P* represents the pressure differential value created by the Flow Finder orifice to which the current flow transducer is pneumatically connected. This value is converted by PressureMAP to the appropriate flow reading for the defined flow range of the device.

- ❖ *Status* indicates the status of the pair. Please refer to Appendix 2 of this manual for an explanation of the various status conditions.
 - ❖ *Absolute* defines the actual pressure reading provided by the current loop device before its reading is adjusted for barometric pressure. This field appears only if a barometric transducer is installed in the office.
 - ❖ *Reading* represents the unbiased reading for that type of device. (The actual reading might be biased by an offset in the PressureMAP database—e.g., an SP device.) When running the Diagnostic Realtime Reading on a Trunk and Toll contactor, the usual reading will be replaced by a series of question marks. A VOLT reading in this column indicates the presence of lethal voltage. Refer to Appendix 2 in this manual for descriptions of verbose (non-valid) reading messages.
- **Is a resistive device on a subscriber pair reading SHRT or UBAL?**
 - **Is a device's flow or pressure reading inaccurate?**

Run Diagnostic Test 4, Specific Device Info. This test allows you to review the PressureMAP data setup of individual devices to troubleshoot problems caused by data conflicts. Check for accurate coding of data fields such as *Access #*, *(device) Type*, *Range* (for flow devices), *TD Type*, etc. It's also a good idea to check *Remarks* and *Comments*. Tables listing Device Types and TD Types are provided in the Technical Notes section of this manual.

A UBAL or SHRT reading may be produced for a resistive device on a subscriber pair when the TD Type entered does not match the ground connection for the device installed in the field—for example, a device hooked up Ring side to ground, with the TD Type coded as Tip side to ground.

- **Is an OPEN in the CO or in the field?**

Run Diagnostic Test 5, Capacitance Test. This test is used to determine how far the 289H-M is located from an OPEN on a pair. Although only a very rough estimate is given, it is useful in determining whether the OPEN is within the CO or outside. Readings are displayed continuously until an <Esc> is entered. The screen that is displayed shows the status of the following fields.

- ❖ *Counts* is the raw response from the 289H's capacitance counter. This information is useful to System Studies Technical Support personnel.
- ❖ *p-Farads* is the capacitance in picofarads, computed from the raw counts. (One picofarad is .000001 microfarads.)
- ❖ *K-feet* is the rough computed distance of an open from the 289H monitor in thousands of feet. It is important that you NOT use this distance for fault locating because it is an extremely rough estimate.
- ❖ *Location* indicates whether the open is inside (OPNI) or outside (OPNO) the company.

- **Are all of the Line Selection Relays working or is one “stuck”?**
- **Is an OPEN reading caused by a faulty relay in the CO?**
- **Are a few devices reading incorrectly?**
- **Which subscriber lines are busy?**

Run Diagnostic Test 6, Ping Relays Test. This test cycles through all lines on a card with a distinctive rhythm. If a relay is not working, it should be possible for someone at the CO to determine which one it is by listening for a flaw in the pattern. Entering an <Esc> will end the test.

When running this test on a dedicated card, the output displayed is the word “ping” for each time the card is pinged. For subscriber cards, the output displayed is a sequence of ones and zeros—one digit for each line. The first digit displayed corresponds to Pair 1 on the selected card. A value of 0 indicates the line was free, whereas a value of 1 indicates that the line was found to be busy when tested. After separating the relays that were found to be busy during the test from the list of relays that did not “ping” when tested, you can determine which relays are faulty.

- **The RAM memory of the 289H-M may be corrupted.**
- **All devices are reading incorrectly.**

Select Option 7, Cold Reset, from the Diagnostic Menu. Executing a Cold Reset wipes out patches and any knowledge of a device’s status. In addition, the password is reset so that none is required. If the 289H-M is equipped for Dedicated Tone capability, the reset monitor will default to the condition where the pseudo-data tone is routed to all pairs. This option will remotely command the 289H-M to reset. At the next regular call cycle, the 289H-M will reprogram itself. Please note that PressureMAP’s initial call that reloads the device data will be longer than an ordinary scheduled call.

If all devices are still reading incorrectly, either the controller or Utility Card (or both cards) may be faulty. These cards should be swapped with known working cards to determine if one or both of them is at fault.

- **Is a device reading UBAL?**

Run Diagnostic Test 8, Leakage Test. The leakage test measures resistance on tip/gnd, ring/gnd and across tip and ring. These measurements are used to determine if there is any leakage on the pair. The reading displayed is the actual voltage measured on the pair. The threshold level for a UBAL reading is 10M ohms, with values less than 10M ohms indicating greater leakage.

For a resistive device on a subscriber pair, a UBAL (or SHRT) reading may indicate that the TD Type entered is incorrect. (See Specific Device Info troubleshooting, described earlier in this section.)

- **Is there excess AC voltage on the pair?**
- **Was the last reading for a device VOLT?**

Run Diagnostic Test 9, AC Test. The AC Test measures AC voltage on tip/gnd and ring/gnd. The reading displayed is the actual voltage measured on the pair. If AC voltage in excess of 12 VAC is detected, the resulting PressureMAP reading will be VOLT.

- **Is there DC voltage on the pair?**
- **Was the last reading for a device VOLT?**

Run Diagnostic Test 10, DC Test. The DC Test measures DC voltage on tip/gnd and ring/gnd. The reading displayed is the actual voltage measured on the pair. If any DC voltage in excess of 42V DC is detected, the resulting PressureMAP reading will be VOLT.

289H LSS ERROR MESSAGES

This list contains possible error messages pertaining to the 289H-M LSS that may be listed under System Error Messages. Please refer to the PressureMAP section of the *PressureMAP System Operations Manual* (Section 2) for information on obtaining a report listing any current System Error Messages. The System Error Messages should, for the most part, be self-explanatory. However, if you are unsure of the meaning of a particular message, or if you wish to find out more about a possible fix to the problem, then this section will prove to be a valuable resource.

In the event that an error has occurred, you should first attempt to duplicate the error. If it cannot be duplicated, then the problem most likely has been solved by the MAP System. If the problem still persists, you should look up the error message in this appendix. There are a number of errors identified in the following pages, and it is possible that the instructions or suggestions accompanying these messages will help you correct the problem. If these messages do not provide the information you need to correct the problem, it may be necessary to give System Studies Technical Support a call.

Before you call, be sure to have your PressureMAP System version number on hand (this number appears in the upper right corner of most program screens). Also, you should be ready to describe the precise steps that are needed to duplicate the problem.

Note: The following 289H LSS Error Messages are generated as a result of PressureMAP's *call* and *readalarm* processes. When an error results from the call process, the Office Name is included in the message. With readalarm, however, the office name is not known until the alert is completely processed. In this case the error would specify: READALARM LSS, followed by the text describing the condition. Also note that the information contained within the error message's square brackets is of use to System Studies Technical Support personnel. Descriptions of the state and status codes are given in Appendix 4 of this manual.

ERROR 552 <OFFICE NAME> or <READALARM> LSS, comm. Retry exceeded [state #]

This dispatch indicates that a communications operation was retried some number of times and was never successful. The most probable cause is excessive line noise.

ERROR 553 <OFFICE NAME> or <READALARM> LSS, Lost connection [state #]

This dispatch indicates that communications were lost at an unexpected time during the call. Two of the most likely causes are: 1) the telephone connection was lost, or 2) the 289H-M LSS hung up after detecting too many errors. Check for a noisy phone line.

ERROR 554 <OFFICE NAME> or <READALARM> LSS, comm. sync lost [state #]

This dispatch indicates that a message was received from the 289H-M LSS out of sequence. If this occurs, there may be a logic problem within the 289H-M LSS firmware. Call System Studies.

ERROR 555 <OFFICE NAME> or <READALARM> LSS, no response [state #]

This dispatch indicates that there was no response from the 289H-M LSS. Use CPAMS Diagnostics to access the 289H-M LSS. If there is still no response, manually reset the 289H-M by powering the system off and back on again.

ERROR 556 <OFFICE NAME> or <READALARM> LSS, won't accept password.

This dispatch is a result of a refused password from the 289H-M. The most likely cause for this dispatch is that the PressureMAP system that is calling is not the one that normally calls. It is also possible that some other PressureMAP system has called the 289H-M LSS with a password change. The dispatch may also be due to a restoration of a history file that was created before the password was last changed. Someone will have to manually reset the 289H-M LSS.

ERROR 557 <OFFICE NAME> or <READALARM> LSS, unknown version [version %X]

This dispatch indicates that the 289H-M LSS firmware being used is a version newer than PressureMAP recognizes. This may happen if a new ROM is placed into an 289H-M LSS without PressureMAP being updated. Call System Studies Technical Support.

ERROR 558 <OFFICE NAME> or <READALARM> LSS, cannot be updated [version %X]

This dispatch indicates that PressureMAP was unable to update the 289H-M LSS firmware to the current version. Call System Studies Technical Support.

ERROR 559 <OFFICE NAME> or <READALARM> LSS, reset since the Last call

This dispatch indicates that the 289H-M LSS has gone through a cold reset since the last time it was called. The cold reset may have been commanded through the diagnostic routines, the DCD/RING logic, or it may have been caused by someone performing a manual reset. Ignore this unless other problems are indicated.

ERROR 560 <OFFICE NAME> or <READALARM> LSS, responded incorrectly [cmd/resp %04X]

This dispatch indicates that a response from the 289H-M LSS was formatted incorrectly. This usually means there is a problem in the 289H-M LSS firmware. Call System Studies Technical Support.

ERROR 561 <OFFICE NAME> or <READALARM> LSS, memory checksum error [address %X]

This dispatch indicates that a memory checksum is incorrect or a region of the 289H-M LSS memory is not functioning properly. This may be due to bad memory within the 289H-M LSS or an incorrectly applied update. Replace the 289H-M's Controller Card.

ERROR 562 <OFFICE NAME> or <READALARM> LSS, won't accept the new password

This dispatch indicates a failure of the SET PASSWORD command. It may indicate that the new password is incorrectly formatted.

ERROR 563 <OFFICE NAME> or <READALARM> LSS, refused to load memory

This dispatch indicates that the 289H-M LSS would not accept a LOAD MEMORY command. This probably indicates that the command was badly formatted. Call System Studies Technical Support.

ERROR 564 <OFFICE NAME> or <READALARM> LSS, is out of calibration

This dispatch indicates that the 289H-M LSS reported calibration values that were not within specification. CPAMS Diagnostics should be used to determine the exact cause. Replace the Controller Card.

ERROR 565 <OFFICE NAME> or <READALARM> LSS, bad command format [command %X]

This dispatch indicates that PressureMAP formatted a command incorrectly. Call System Studies Technical Support.

ERROR 566 <OFFICE NAME> or <READALARM> LSS, nogo response [command %X]

This dispatch indicates that the 289H-M LSS refused to execute one of PressureMAP's commands. Ignore this message unless the condition persists.

ERROR 567 <OFFICE NAME> or <READALARM> LSS, firmware was not running

This dispatch indicates that the 289H-M LSS firmware was found to be not running. The session will have been terminated after an attempt to restart the 289H-M LSS firmware. Ignore this message unless the condition persists.

ERROR 568 <OFFICE NAME> or <READALARM> LSS, local protocol error [status #]

This dispatch indicates that an "impossible" condition was detected within the protocol processor. This message represents a problem within PressureMAP. Call System Studies Technical Support.

ERROR 569 <OFFICE NAME> or <READALARM> LSS, attempted use of a bad access number

This dispatch indicates that an incorrectly formatted CPAMS access number was used. This probably indicates a data error within PressureMAP. Check the device logs for incorrectly formatted access numbers.

ERROR 570 <OFFICE NAME> or <READALARM> LSS, aborted due to user request

This dispatch indicates that a PressureMAP user aborted a session with the 289H-M either with a <Esc> or <Ctrl C>. Ignore this message.

ERROR 571 <OFFICE NAME> or <READALARM> LSS, does not match remote monitor [type#]

This dispatch indicates that the monitor type entered into the PressureMAP database does not match the LSS engine type. The current monitor types are the 289 and the 289H. This condition is detected at the beginning of the phone conversation and, once detected, the error is posted and the conversation is terminated.

ERROR 572 <OFFICE NAME> or <READALARM> LSS detected a local dialing/comm error [status #]

The 289H had trouble sending an alert to the PressureMAP Alarm Receiver due to modem/dialing errors or communication problems detected in the 289H-M. NOTE: The number found in the brackets in the error condition corresponds to the local dialing/communications error that the 289H-M detected.

ERROR 573 <OFFICE NAME> or <READALARM> LSS is incapable of alerting, remove MAPAlert #

The 289H-M firmware is not capable of sending an alert. To enable the capability, a new ROM will need to be ordered from System Studies for the 289H-M. The new ROM will give the 289H-M the ability to detect and call PressureMAP with alert conditions. For now, the phone number from the MAP Alert # field must be removed for this office. It may be added again when the new ROM is installed in the 289H-M.

ERROR 574 <OFFICE NAME> or <READALARM> LSS, no space for MAP Alert Phone Number

The 289H-M in question has reached its limit on the number of systems it can send alerts to. Using PressureMAP diagnostics, look at the 289H-M dialout phone number information. This will show what systems the 289H-M currently sends alerts to. To add a new dialout phone number to the 289H-M there must be at least one empty entry in the dialout phone number information structure. To delete an entry in the dial out phone number structure, remove the MAP Alert # from a PressureMAP System calling this 289H.

ERROR 575 <OFFICE NAME> or <READALARM> LSS, received alert without a valid system #

Basically, a user on another PressureMAP system programmed this system's Alert Receiver phone number into the *MAP Alert #* field for one of their 289H-M offices, causing it to call and send alerts to the incorrect PressureMAP system. The PressureMAP system with the incorrect MAP alert number needs to have the number corrected. Look at the Unrecognizable CPAMS Alarms file (UNKNOWN.ERR) using the View MAP Data Files menu option. In this file you should find one or more entries for 289H-M alerts received from the unknown PressureMAP system. These log entries will contain the dialout phone information from the 289H-M that incorrectly called this

PressureMAP system. Follow the instructions in the log file to find the number of the system that has incorrectly programmed the 289H-M that called this system's Alarm Receiver number.

ERROR 576 Failed to load <OFFICE NAME> tuning into LSS (command %X)

Download of 289H-M tuning failed, call System Studies Technical Support.

CONTROLLER CARD MODEM INFORMATION

The modem installed in the 289H-M Controller Card is registered with the FCC (Federal Communications Commission) under Part 68. This modem is designed to be used on standard device telephone lines. It connects to the telephone line by means of a standard jack called the USOC RJ-11C. Connection to telephone company-provided coin service (central office implemented system) is prohibited. Connection to party lines service is subject to state tariffs.

If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, the telephone company will provide this information upon request. In certain circumstances, it may be necessary for the telephone company to request information from you concerning the equipment which you have connected to your telephone line. Upon request of the telephone company, provide the FCC registration number and the ringer equivalence number (REN) of the equipment which is connected to your line; both of these items are listed on the modem label. The sum of all of the REN's on your telephone lines should be less than five in order to assure proper service from the telephone company. In some cases, a sum of five may not be usable on a given line.

If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If the telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you will be notified as soon as possible. When you are notified, you will be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC.

In the event repairs are ever needed on the Controller Card modem, they should be performed by System Studies Incorporated or by an authorized representative of System Studies. For more information, please contact System Studies Incorporated at (800) 247-8255 or (831) 475-5777.

