

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 1 of 27

CONTENTS

Location Requirements	Page 2
Supervisor Functions	Page 4
Components	Page 14
Error Messages and Responses	Page 18
Example Reports	Page 23

ACCESS LEVELS

Operator Level:	No Password Required Administer DUI and Check-In breath tests Copy last breath report generated
Supervisor Level:	Password Required Access to all options available to an Operator Reprint reports Export data as needed Perform Simulator Solution Change Perform Routine Performance Check Perform Diagnostic Test Perform Accuracy and Precision Test View Technician Screen Purge the Sample Chamber Remove/Return instrument from/to service
Technician Level:	Only available to DataMaster Technical Services.

The information provided in this manual is not designed to make the DataMaster DMT Supervisor an expert on the DataMaster DMT. This manual will familiarize the Supervisor with the instrument in order to perform simple maintenance and repairs and to provide copies of records as needed. An understanding of mechanics, optics, and electronics is not required to perform simple maintenance and repairs on the DataMaster DMT.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 2 of 27

LOCATION REQUIREMENTS

An instrument cannot be installed for evidentiary use at a location unless the host agency agrees to the following:

- Provide personnel to be trained and available to perform the duties of a DataMaster DMT Supervisor.
- Keep a complete record of use and maintenance, and when required submit copies of records to DataMaster Technical Services or other requesting agencies.
- Maintain the instrument and surrounding area in which it is installed according to the initial specifications and meet any subsequent modifications required by DataMaster Technical Services.

DataMaster Technical Services may withdraw approval of a site if:

- The host agency has failed to adhere to the conditions listed above.
- The instrument is being underutilized.
- There are reason(s) which makes the site unsatisfactory for continued DataMaster DMT use.

ACCESS

- The DataMaster DMT should never be accessible to unsupervised, unauthorized persons.
- Access by appropriate personnel and certified law enforcement officers for maintenance and processing DUI subjects should be allowed 24 hours per day, seven (7) days per week.
- Only trained DataMaster DMT Supervisors may perform maintenance on an instrument.

CLEANING and VENTILATION

- The instrument and surrounding area should be kept clean with little or no dust or dirt accumulation.
- The instrument cover and supporting surface may be cleaned with a damp cloth.
- Cleaning supplies, paint, paint supplies and other chemicals should not be stored near the instrument.
- The room should have adequate ventilation to facilitate cooling of the instrument and minimize the presence of potentially interfering substances.
- Nothing should be placed behind or around the instrument that would obstruct ventilation of the instrument.
- Beverages or other liquids should not be placed on or in the immediate area of the instrument.

MAINTAIN REPORTS, RECORDS AND LOGS

- The DataMaster DMT Supervisor will ensure the following logbooks provided by DataMaster Technical Services are kept complete:
 - DataMaster Operators' Log (ALC_F200_13) (if used in your county).
 - DataMaster Maintenance Log (ALC_F200_12).
- The Supervisor will ensure all generated reports (except subject sample reports) are filed in the DataMaster DMT documents binder.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 3 of 27
----------------------------------	------------------------------	---	--------------

MAINTAIN INSTRUMENT SECURITY

- The supervisory functions of the DataMaster DMT should not be accessible to unauthorized persons at any time. If you step away from the instrument, **Log Off**.
- Do not give out the password, security screwdriver or simulator key.

MOVING AN INSTRUMENT

- Contact DataMaster Technical Services if there is a need to move an instrument beyond the length of the power cord.

POWER REQUIREMENTS

- Power to the DataMaster DMT should be provided from a low use 15 amp minimum, grounded 120 VAC \pm 10% line which operates at a frequency of 60HZ.
- The DataMaster DMT is to be plugged into the supplied line conditioner or an approved uninterruptible power supply (UPS).

PRINTER MAINTENANCE

- Each agency is responsible for ensuring that a complete set of replacement printer cartridges, print heads and paper are available at all times.

ETHERNET ACCESS

- A dedicated Ethernet port is recommended to connect the DataMaster DMT to the DPS Intranet.

TEMPERATURE REQUIREMENTS

- While the DataMaster DMT is in use the room temperature should be maintained between 65°F and 78°F and humidity between 30-50%.
- A fan, dehumidifier, heater, or air conditioner may be used to control the room temperature and humidity; however nothing should be blowing directly on the instrument.

MAINTAIN DATAMASTER SUPPLIES

- DataMaster mouthpieces and simulator solution may be obtained by contacting DataMaster Technical Services. A shipment will be sent as soon as practical.
- All empty or expired bottles of solution should be returned to DataMaster Technical Services.
- Do not stockpile DataMaster supplies.

DATAMASTER TECHNICAL SERVICES NOTIFICATION TIME FRAMES:

- DataMaster Technical Services should be notified **AS SOON AS POSSIBLE** of any service needs.
- Two (2) weeks advance notice should be given if there is a need to move an instrument beyond the length of the power cord.
- Two (2) weeks advanced notice should be given if building renovations will result in modification to an existing DataMaster DMT location.
- In the event of an emergency or a natural disaster (e.g. flood, extreme cold, major building damage, etc.), if the DataMaster DMT can be moved without compromising safety, please move the instrument to a secure location.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 4 of 27

SUPERVISOR FUNCTIONS

PROVIDING MONTHLY UPDATES

- At the beginning of each month copies of log book entries made during the previous month should be sent to DataMaster Technical Services. This includes:
 - DataMaster Operators' Log (ALC_F200_13) (if used in your county).
 - DataMaster Maintenance Log (ALC_F200_12).
- If your DataMaster DMT is **NOT** connected to an Ethernet port, a manual download of the DataMaster DMT data will need to be provided. Contact DataMaster Technical Services for information.

SIMULATOR SOLUTION

- When a new simulator solution is added, the certified concentration of the solution is entered into the DMT. The instrument will calculate a $\pm 5\%$ acceptance range based on this concentration. If, while running a test, the simulator result is beyond $\pm 5\%$, the instrument will display the error "Simulator Out of Range" and will not allow a subject sample to be provided until a passing simulator result is attained.
- DataMaster DMT Supervisors should periodically check the documented simulator vapor result in the DataMaster Operators' Log (ALC_F200_13) (if used in your county). If the solution appears to be nearing the -5% value, the Supervisor should perform a simulator solution change.
- Each bottle of simulator solution is labeled with the lot number, certified value, acceptance range, preparation date and expiration date. When changing solutions, use the oldest solutions first.

LOG ON / LOG OFF PROCEDURE

After selecting a protocol or procedure, the instrument will prompt the user to enter a password. Once a password is entered, the Home Screen will display the access level in the lower right corner. Always log off when finished with the instrument.

To log on, you may also:

LOG ON:

1. Touch the screen to deactivate the screen saver.
2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Security" → "Enter Password".
4. Enter password.

LOG OFF:

1. Touch the screen to deactivate the screen saver.
2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Security" → "Log Off".

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 5 of 27

REPRINTING REPORTS

1. Touch the screen to deactivate the screen saver.
2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select “Reports”.
4. Enter password.
5. The right side of the screen lists all records stored on the instrument sorted by type.
6. Touch the symbol next to a report type to open the drop-down list of reports sorted by date and time.
7. If more than one (1) record was generated on a date, open the reports for the date in question by touching the next to the date.
8. Select the desired report by highlighting it on the right side of the screen. The report highlighted will be displayed on the left side of the screen.
9. When you have selected the report desired, press “Print”.
10. You will be given the options of printing a paper copy, printing an electronic copy to a USB storage device, or both. Select the printing method desired and press “OK”.
11. Exit and Log off when all printing is complete.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 6 of 27
----------------------------------	------------------------------	---	--------------

SIMULATOR SOLUTION CHANGE

1. Gather supplies: a bottle of simulator solution and a few paper towels.
 - a. Ensure the solution is not expired. The expiration date means that the solution must be placed in service prior to that date. It does not mean that the solution has to be removed by that date.
2. Unplug the simulator. Unlock the arms from around the simulator head.
3. Disconnect the BNC connector and the quick connects from the simulator vapor ports. (See Figure 4, page 15)
4. Unscrew the simulator head from the simulator jar.
5. Discard the used simulator solution.
6. Using a clean paper towel, carefully wipe the simulator head mechanism and wipe the jar dry.
7. Inspect the simulator O-ring and jar for damage.
8. Pour the new simulator solution into the jar, avoid splashing and glugging.
9. Replace the simulator head. Ensure the simulator jar is properly threaded to the simulator head. It should be snug. Do not over tighten.
10. Plug the simulator in. Ensure the paddle is rotating.
11. Reconnect the BNC connector and the quick connects on the simulator head to the simulator tower.
12. Lock the arms around the simulator head.
13. Affix one (1) simulator solution label to the top of the simulator head.
14. Touch the screen to deactivate the screen saver.
15. Wait for the simulator temperature to read $34^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$.
16. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
17. Select “Protocols” → “Simulator Solution Change”.
18. Enter password.
 19. Enter your name, the solution concentration and the lot number in the required fields. Refer to the sticker on the bottle of simulator solution and ensure that the correct lot number and target value are entered. Press “OK”.
20. The DataMaster DMT will count down from 30 minutes while the solution equilibrates. The instrument will automatically begin its checks once the timer has concluded.
21. Accuracy and Precision Check.
 - a. Five (5) replicates of the Simulator Vapor will be analyzed.
 - b. The instrument will calculate a $\pm 5\%$ acceptance range of the simulator solution based on the certified value entered. If the average of the five (5) analyses is not within range the DataMaster DMT will abort the test, see page 20: “Simulator Out of Range”.
 - c. The calculated standard deviation must be less than 0.0020. If it is greater than 0.0020 the DataMaster DMT will abort the test, see page 21: “Standard Deviation Out of Range”.
22. Once a passing Simulator Solution Change is complete the instrument will prompt for the Supervisor’s signature. Sign the box and press “Accept” to complete.
23. File with your onsite DataMaster DMT maintenance records. If any failing reports are generated prior to receiving a passing Simulator Solution Change, those should be kept with the passing report.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 7 of 27
----------------------------------	------------------------------	---	--------------

24. Log Off.

25. Affix the remaining simulator solution label to the DataMaster Maintenance Log (ALC_F200_12). Under the label write "Simulator Solution Change". Write your name and date where indicated.

26. In the DataMaster Operators' Log (ALC_F200_13) (if used in your county) write your name and date. Under "Subjects Name", write "TEST/Simulator Solution Change" and the average result from the Accuracy and Precision Check under "Simulator Vapor 1".

See page 23 for an example of a Simulator Solution Change Report.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 8 of 27
----------------------------------	------------------------------	---	--------------

ROUTINE PERFORMANCE CHECK

The DataMaster DMT Supervisor shall perform Routine Performance Checks during the months of **February, June, and October** of each year. A reminder will be displayed on the DataMaster DMT “Ready, Push Run” screen during the months of February, June, and October. The reminder states “*Routine Performance Check Now Due*”. If the Routine Performance Check is not completed before the end of the required month, the instrument will automatically be removed from service until such time as a passing RPC is completed. The instrument will display “*Routine Performance Check Required*”.

1. Gather Supplies:

- a. A bottle of Simulator Solution.
 - i. Ensure the solution is not expired. The expiration date means that the solution must be placed in service prior to that date. It does not mean that the solution has to be removed by that date.
 - b. A handheld portable radio.
 - c. A mouthpiece.
2. Unplug the simulator. Unlock the arms from around the simulator head.
 3. Disconnect the BNC connector and the quick connects from the simulator vapor ports. (See Figure 4, page 15).
 4. Unscrew the simulator head from the simulator jar.
 5. Discard the used simulator solution.
 6. Using a clean paper towel, carefully wipe the simulator head mechanism and wipe the jar dry.
 7. Inspect the simulator O-ring and jar for damage.
 8. Pour the new simulator solution into the jar, avoid splashing and glugging.
 9. Replace the simulator head. Ensure the simulator jar is properly threaded to the simulator head. It should be snug. Do not over tighten.
 10. Plug the simulator in. Ensure the paddle is rotating.
 11. Reconnect the BNC connector and the quick connects on the simulator head to the simulator tower.
 12. Lock the arms around the simulator head.
 13. Affix one (1) simulator solution label to the top of the simulator head.
 14. Touch the screen to deactivate the screen saver.
 15. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 16. Select “Protocols” → “Routine Performance Check”.
 17. Enter password.
 18. Enter your name, the solution concentration, and the lot number in the required fields. Refer to the sticker on the bottle of simulator solution and ensure that the correct lot number and target value are entered. Press “OK”.
 19. The DataMaster DMT will count down from 30 minutes while the solution equilibrates. The instrument will automatically begin its checks once the timer has concluded.
 20. **Diagnostic Check.**
 - a. The instrument will perform a self test of components to ensure proper operation and specifications are met.
 - b. If any of the specifications are out of range, the DataMaster DMT will abort the test.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 9 of 27
----------------------------------	------------------------------	---	--------------

21. Accuracy and Precision Check.

- a. Five (5) replicates of the Simulator Vapor will be analyzed.
- b. The instrument will calculate a $\pm 5\%$ acceptance range of the simulator solution based on the certified value entered. If the average of the five (5) replicates is not within range the DataMaster DMT will abort the test, see page 20: “Simulator Out of Range”.
- c. The calculated standard deviation must be less than 0.0020. If it is greater than 0.0020 the DataMaster DMT will abort the test, see page 21: “Standard Deviation Out of Range”.

22. Radio Frequency Detection Test.

- a. A box will appear on the screen saying “RF Detection Test”, “Detector Voltage” and the actual voltage numbers will be displayed.
- b. **If your agency DOES NOT have a console radio, skip to step c.** If your agency has a console radio, have dispatch key all routinely used frequencies.
 - i. The DataMaster DMT should **NOT** detect radio frequency during the console radio test.
 - ii. The detector voltage should **NOT** shift by more than 0.003V.
 - If the detector voltage shifts by more than 0.003V and Radio Frequency is **NOT** detected, press “Cancel” to abort the test, remove the instrument from service and contact DataMaster Technical Services.
 - iii. If the DataMaster DMT detects a frequency from the console radio, it will move on to step 23, the Sample Acceptance test. This is **ACCEPTABLE**. The Handheld Radio frequency transmitter test will be skipped at this point.
 - Once the RPC Protocol is complete, perform a Check-In breath test. On the data entry screen, enter “RPC TEST” for the first name and “RF TEST” for the last name.
 - When the instrument prompts “Please Blow”, finish the RF detection test by following step c below. Attach the Check-In report to the RPC report.
 - Note on the RPC report “Console radio caused RF detection”.
- c. Key a handheld radio in close proximity to the breath tube.
 - i. The detector voltage should change significantly and the DMT should report RF Detected. The instrument will beep and will immediately move on to the Sample Acceptance test.
 - ii. If the detector voltage shifts by more than 0.003V and Radio Frequency is **NOT** detected, press “Cancel” to abort the test, remove the instrument from service and contact DataMaster Technical Services.

23. Sample Acceptance Test.

- a. Press “OK” when you are ready to start the test.
- b. The DMT will run through a series of quality control checks.
- c. When prompted “Please Blow” and an intermittent tone is heard, insert a new mouthpiece into the breath tube.
- d. A proper Sample Acceptance Test consists of 4 types of air flow; a shallow breath; intermittent breath; a suck back test; and a valid, alcohol-free sample. During the testing sequence, the bottom left corner of the screen will display each instruction for fifteen (15) seconds for each type of breath. It may not be necessary to use the entire

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

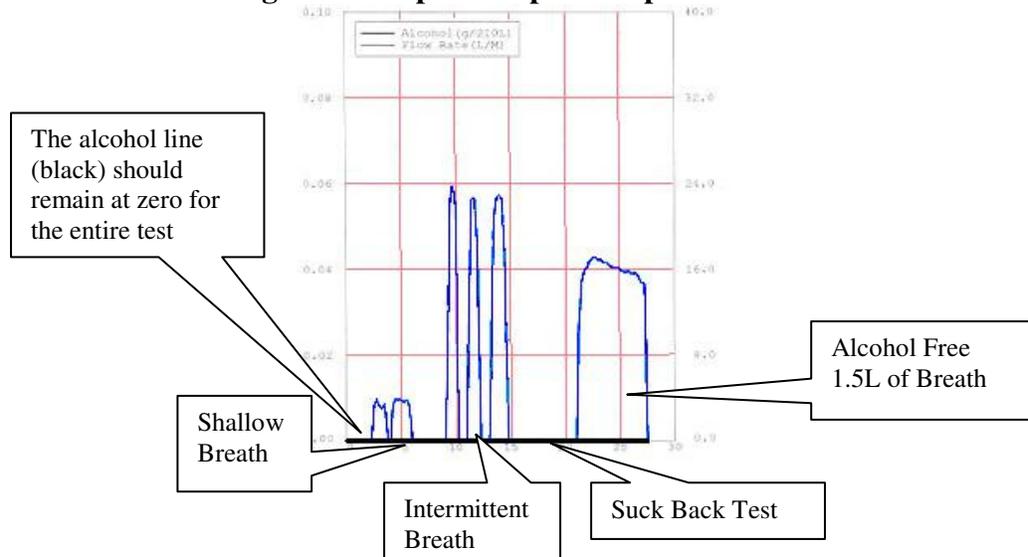
Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 10 of 27

fifteen (15) seconds per sample type. A proper Sample Acceptance Test graph should look like the one below.

Figure 1: Proper Sample Acceptance Test



- **Shallow Breath:** Very lightly blow a small amount of air into the mouth piece, allowing some air to escape out the sides of your mouth. The air flow should be very slight, but strong enough to just register air flow (blue line) on the screen. Blow for a few seconds then stop. The instrument should **not** report an alcohol response (black line) and should **not** accept the sample.
 - **Intermittent Breath:** Strongly blow into the mouth piece for 1-2 seconds and stop a couple of times. Be careful not to suck back on the mouth piece between puffs of air. The instrument should **not** report an alcohol response (black line) and should **not** accept the sample.
 - **Suck Back Test:** **VERY GENTLY** suck back on the mouth piece just enough so you feel a one-way valve stop the air flow (less than one (1) second of pressure). If you suck too hard, you may damage the one-way valve. Once you feel this one (1) way valve hit, you are finished. **Do not continue to suck back on the breath tube. Once is enough.** The instrument should **not** report an alcohol response (black line) and should **not** accept the sample.
 - **1.5L Alcohol Free Sample:** While watching the total volume box in the bottom right corner of the screen, provide a sample of 1.5L to 1.7L of air to the instrument. The instrument should accept a sample that is greater than 1.5L of air. The instrument should **not** report an alcohol response.
 - **If any elevation of the alcohol line above 0 is visible, rerun the Sample Acceptance Test.**
- e. Once the last sample has been provided to the instrument, it will end the testing sequence.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 11 of 27
----------------------------------	------------------------------	---	---------------

- f. A box will pop up asking “Did Instrument Pass All Sample Acceptance Checks? Yes/No”
 - i. If one (1) of the first three (3) breaths (shallow, intermittent or suck-back) was accepted by the instrument as a valid breath (meaning it ended the testing sequence) the test is considered failing.
 - ii. If a response is noted on the alcohol line, the test is considered failing.
 - iii. If the sample Acceptance test fails, select “No”. The instrument will then prompt the operator to enter a reason for the failure. Contact DataMaster Technical Services for assistance.
 24. Once a passing RPC is complete, the instrument will prompt for the DMT Supervisor’s signature. Sign the box and press “Accept”. The report will print and an electronic copy will be transmitted to DataMaster Technical Services.
 - a. File the report with your onsite DataMaster DMT records. If any failing reports are generated prior to receiving a passing RPC, those should be kept with the passing RPC.
 - b. If the DataMaster DMT is **NOT** connected to an Ethernet port, a color copy of the RPC report should be sent to DataMaster Technical Services.
 25. Log Off.
 26. Affix the remaining simulator solution label to the DataMaster Maintenance Log (ALC_F200_12). Under the label write “Routine Performance Check” or “RPC”. Write your name and date where indicated.
 27. In the DataMaster Operators’ Log (ALC_F200_13) (if used in your county) write your name and date. Under “Subjects Name” write “TEST/RPC” and the average result from the Accuracy and Precision Check under “Simulator Vapor 1”.
- See page 24 for an example of a Routine Performance Check Report.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 12 of 27

DIAGNOSTIC TEST

- As a method for troubleshooting, the DMT Supervisor may need to perform a Diagnostic Test on the DataMaster DMT.
- The Diagnostic Test checks software, hardware, optics, and mechanical function.
- To perform a Diagnostic Test:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Diagnostic”.
 4. Enter password.
 5. Once the test is complete and the report prints, Log Off.
- See page 25 for an example of a Diagnostic Report.

ACCURACY AND PRECISION CHECK

- As a method for troubleshooting, the DMT Supervisor may need to perform an Accuracy and Precision Check on the DataMaster DMT.
- The Accuracy and Precision Check will run ten replicate samples of the Simulator Vapor and report the average concentration and standard deviation of the results.
- To perform an Accuracy and Precision Check:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Accuracy and Precision”.
 4. Enter password.
 5. Once the test is complete and the report prints, Log Off.
- See page 26 for an example of an Accuracy and Precision Check Report.

TECHNICIAN SCREEN

- As a method for troubleshooting, DataMaster Technical Services may request the DMT Supervisor to access the Technician Screen and relay information to a DMT Technician.
- The Technician Screen displays voltage, temperature, and filter settings for the instrument.
- To access the Technician Screen:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Technician Mode”.
 4. Enter password.
 5. When finished, Exit and Log Off.

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 13 of 27
----------------------------------	------------------------------	---	---------------

PURGE SAMPLE CHAMBER

- As a method for troubleshooting, the DMT Supervisor may need to purge the sample chamber.
- To purge the sample chamber:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Functions” → “Purge Sample Chamber”.
 4. Enter Password.
 5. Allow the instrument to purge for 1-2 minutes unless otherwise instructed.
 6. Exit and Log Off.

REMOVE FROM SERVICE / RETURN TO SERVICE

- To remove an instrument from service:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Functions” → “Remove From Service”.
 4. Enter password.
 5. The screen will now display “Not in service” in the bottom left corner of the screen where “Ready, Push Run” would be.
 6. Log Off.

- To return the instrument to service:
 1. Touch the screen to deactivate the screen saver.
 2. Touch the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select “Functions” → “Return to Service”.
 4. Enter password.
 5. The screen will now display “Ready, Push Run” in the bottom left corner.
 6. Log Off.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 14 of 27

COMPONENTS

EXTERNAL COMPONENTS

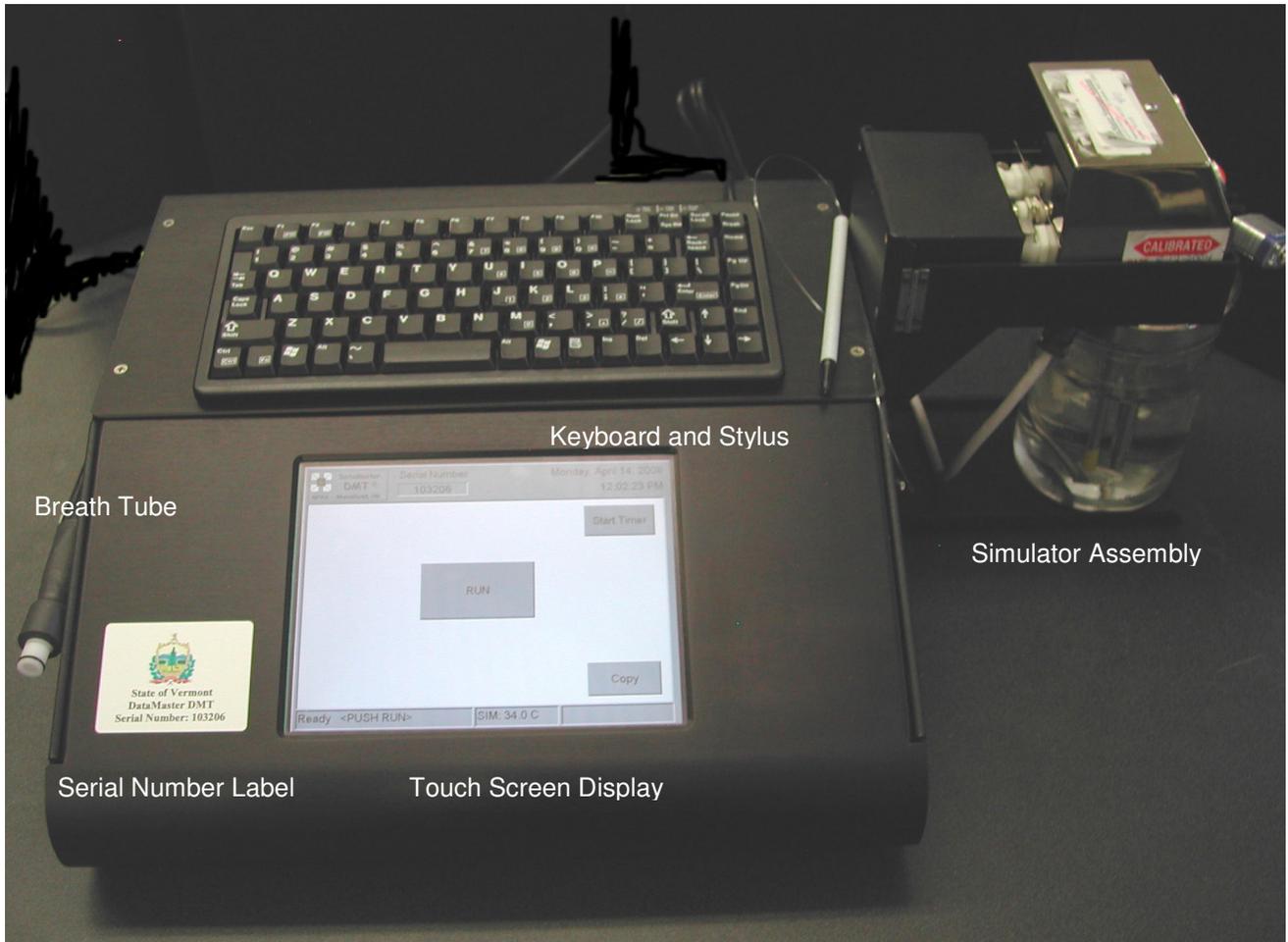


Figure 2: Front view of DataMaster DMT.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 15 of 27



Figure 3: Back view of DataMaster DMT.

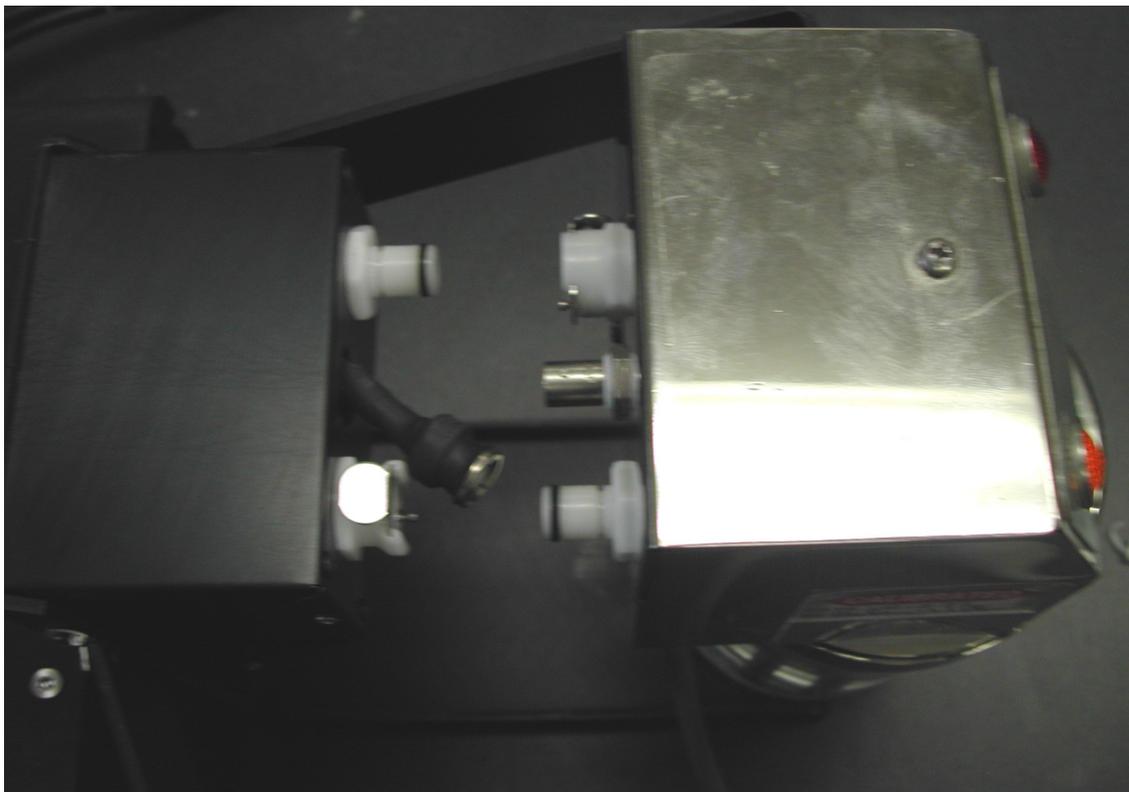


Figure 4: Simulator tower and simulator head quick connects, BNC connector, disconnected.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 16 of 27



Figure 5: Simulator tower and simulator head quick connects, BNC connector, connected.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 17 of 27

INTERNAL COMPONENTS

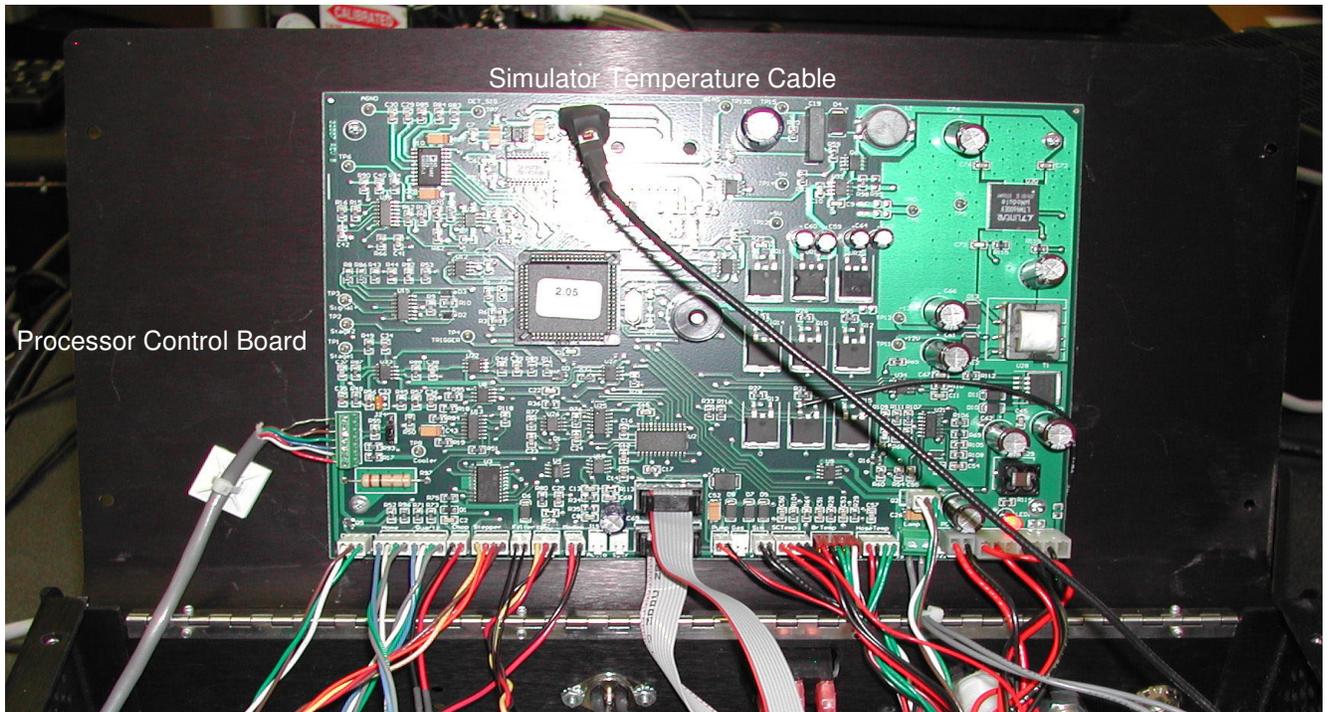


Figure 6: Internal view under lid of DataMaster.

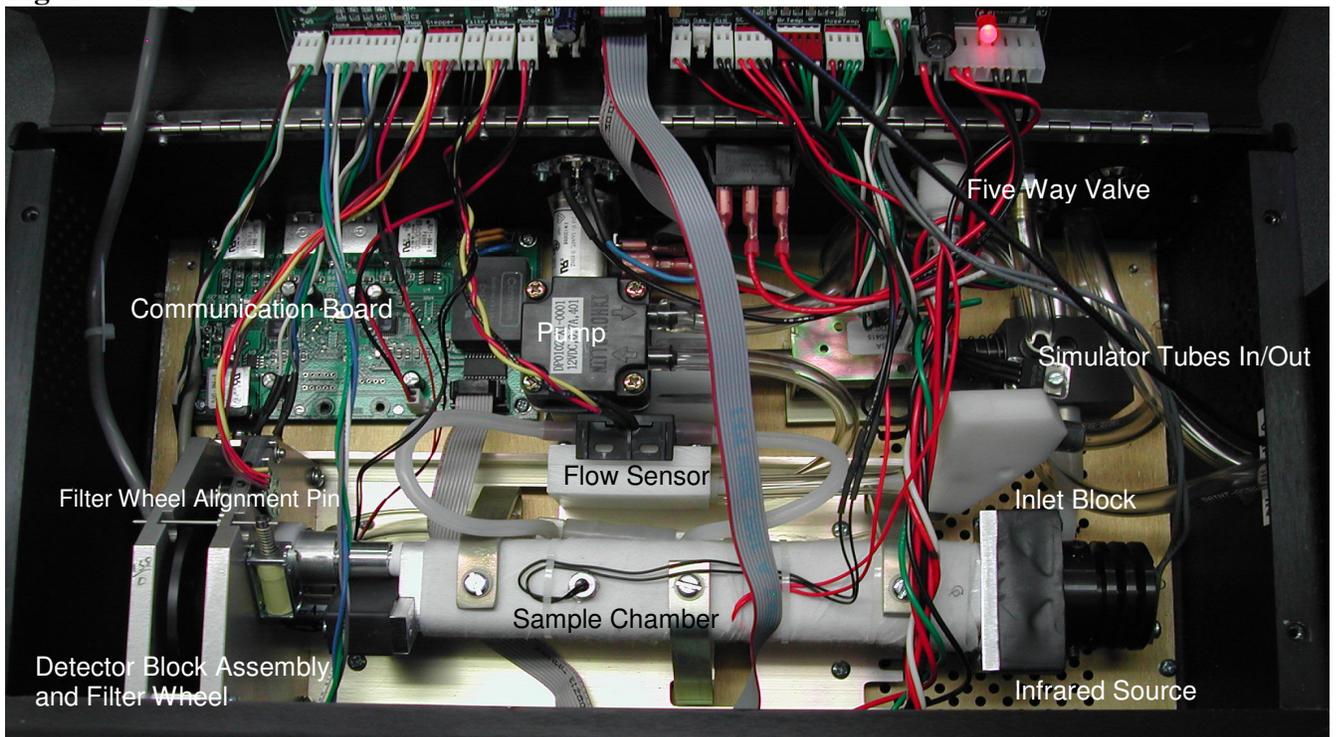


Figure 7: Internal view of DataMaster.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 18 of 27

ERROR MESSAGES AND RESPONSES

- If any of the following error messages or conditions occur, follow the procedures as described. Maintenance procedures are to be performed by trained DataMaster DMT Supervisors only.
- If the situation reoccurs contact DataMaster Technical Services.
- All actions taken on a DataMaster DMT to remedy a condition or error message should be documented in the DataMaster Maintenance Log (ALC_F200_12).
- If you are unable to remedy a condition or error, remove the instrument from service and contact DataMaster Technical Services.
- When contacting DataMaster Technical Services, provide the following information:
 1. Your name, phone number, location and DataMaster DMT serial number.
 2. The error message and/or condition that has occurred.
 3. Test results during and after error message or condition.
 4. What you have attempted to remedy the situation, along with results of tests.

AMBIENT FAIL: The instrument is detecting alcohol in the ambient air.

1. Remove the mouthpiece from the breath tube.
2. Remove possible contamination sources from the processing area.
3. Open windows or use a fan to draw fresh air into the room if possible.
4. Purge the sample chamber for at least 5 minutes.

BLANK ERROR: The instrument is unable to reach zero apparent alcohol.

1. Remove the mouthpiece from the breath tube.
2. Remove possible contamination sources from the processing area.
3. Open windows or use a fan to draw fresh air into the room if possible.
4. Purge the sample chamber for at least 5 minutes.

BREATH TUBE TEMPERATURE OUT OF RANGE: The breath tube temperature is out of specification.

1. Check the breath tube temperature by accessing the Technician Screen.
2. Reseat the breath tube and the breath tube power connections.

CALIBRATION CHECK ERROR: The instrument is not reading the quartz filter correctly.

1. Power the instrument off, wait one (1) minute then turn it on.
2. Perform a diagnostic test.

COMMUNICATION ERROR: The embedded PC is not communicating with the controller board correctly.

1. Turn the instrument off, wait one (1) minute then turn it on.

DETECTOR OVERFLOW: The detector is out of range or a subject's BrAC is greater than 0.600

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Purge the Sample Chamber for at least five (5) minutes.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 19 of 27
----------------------------------	------------------------------	---	---------------

3. If the error remains, turn the instrument off, wait one (1) minute then turn it on. Once the instrument displays “Ready, Push Run” perform a Diagnostic Test.

FILTER # (1,2,3) WON’T ZERO: One (1) of the filters is not reading properly.

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Ensure the room temperature is within acceptable operating temperature.
3. Ensure the ambient air surrounding the instrument is free from alcohol and other contaminants. Ventilate the room if necessary.
4. Purge the sample chamber for 1-2 minutes.
5. If the error remains, turn the instrument off, wait one (1) minute then turn it on. Once the screen displays “Ready, Push Run” perform a Diagnostic Test.

FILTER WHEEL ERROR: The filter wheel is not activating properly.

1. Turn the instrument off, wait one (1) minute then turn it on.
2. Perform a Diagnostic Test.

INTERFERENCE (SIMULATOR SAMPLE): The ratio between the measurements at the three (3) filters is not what is expected for ethanol on the simulator sample.

1. Try the test again.
2. Ensure the room temperature is within acceptable operating temperature.
3. Ensure the ambient air surrounding the instrument is free from alcohol and other contaminants. Ventilate the room if necessary.
4. Change the simulator solution.

INTERFERENCE (SUBJECT SAMPLE): The ratio between the measurements at the three (3) filters is not what is expected for ethanol on the subject’s sample.

1. When the DataMaster DMT prompts “SUBJECT TAKE SECOND TEST? YES or NO” select “YES” and have the subject provide a second sample.
2. Ensure the room temperature is within acceptable operating temperature.
3. Ensure the ambient air surrounding the instrument is free from contaminants. Ventilate the room if necessary.
4. If error message remains, you may have the subject’s blood drawn.

INVALID: An abnormal breath profile has been obtained during sample delivery.

1. Restart the testing process from the “RUN” screen including the fifteen (15) minute observation period.
2. Instruct the subject again on proper delivery of a breath sample.

KEYBOARD DOES NOT FUNCTION:

1. Reseat the keyboard in the USB port at the back of the instrument.
2. Plug the keyboard into a different USB port.
3. If available try a different USB keyboard

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 20 of 27
----------------------------------	------------------------------	---	---------------

LOCKED OR FROZEN DISPLAY: The instrument is not responding to either the keyboard or the touch screen.

1. Turn the instrument off, wait one (1) minute then turn it on.

PLEASE BLOW flashes but instrument does not accept a sample.

1. Refer to graphic display to ensure subject is providing adequate air flow.
2. Remove the mouthpiece from the breath tube and replace with a new mouthpiece.
3. Attempt another breath sample.
4. Reseat the breath tube connection.
5. Check to ensure the 5-way valve is not stuck.
6. If the error remains, turn the instrument off, wait one (1) minute then turn it on.

PUMP ERROR: The flow detector does not detect pump operation or the pump speed is incorrect.

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Open the cover of the instrument
 - a. Ensure all tubing is properly connected and free from kinks.
 - b. Ensure the plunger on the five-way valve is moving freely.
3. Turn the instrument off, wait one (1) minute then turn it on. Once the instrument displays “Ready, Push Run” perform a Diagnostic Test.

SAMPLE CHAMBER TEMPERATURE OUT OF RANGE: Sample chamber is not between 45°C and 55°C.

1. Ensure that the room temperature is within acceptable operating temperature.
2. Check the sample chamber temperature by accessing the Technician Screen.
 - a. If the sample chamber temperature is too high, turn the instrument off and allow it to cool for fifteen (15) minutes then turn it on. Once the instrument displays “Ready, Push Run”, perform a Diagnostic Test.
 - b. If the sample chamber temperature is too low, turn the instrument off, wait one (1) minute then turn it on. Once the instrument displays “Ready, Push Run”, perform a Diagnostic Test.

SIMULATOR OUT OF RANGE: Reported simulator vapor concentration is not within $\pm 5\%$ of the certified concentration. This error may occur during a subject breath test, or during the Accuracy and Precision Test performed during a testing protocol.

1. If the result is 0.000, ensure the 5-way valve is not stuck.
2. If the result is low due to solution depletion, perform a Simulator Solution Change.
3. If the result is out of range not due to depletion, try the test again.
4. Ensure the simulator is properly connected to the simulator tower.
5. Ensure the simulator jar is properly threaded to the simulator head.
6. Inspect the simulator O-ring and jar for damage.
7. Open the instrument cover and ensure the tubing is properly connected and not kinked.
8. Perform an Accuracy and Precision Check to assess the simulator vapor concentration.
9. Perform a Simulator Solution Change with a different lot of simulator solution.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 21 of 27
----------------------------------	------------------------------	---	---------------

SIMULATOR TEMPERATURE OUT OF RANGE: Reported simulator temperature is not between 33.5°C and 34.5°C.

1. Check the simulator temperature by accessing the Technician Screen.
2. If the simulator temperature reads 0.0°C:
 - a. Reseat the BNC connector on the simulator head.
 - b. Ensure the BNC connector is not touching the surrounding opening on the simulator tower.
 - c. Open the cover of the instrument and ensure the simulator temperature cable is properly connected to the processor control board (see Figure 6, page 17).
3. If the simulator temperature reads greater than 34.5°C:
 - a. Ensure the simulator paddle is turning properly.
 - i. If it is not turning properly, carefully unscrew the simulator jar from the simulator head.
 - ii. Lift the simulator head just until the simulator paddle is above the surface of the solution. Using your finger, gently turn the paddle.
 - iii. If it begins to turn properly, reattach the simulator head to the simulator jar.
 - iv. If it does not start turning properly, unplug the simulator, remove the instrument from service and contact DataMaster Technical Services.
 - b. Ensure the room temperature is within acceptable operating temperature. Adjust room temperature as needed.
4. If the simulator temperature reads less than 33.5°C:
 - a. Ensure the simulator is plugged in.
 - b. Verify the power light is on and the heater light is on or blinking.
 - c. Ensure the room temperature is within acceptable operating temperature. Adjust room temperature as needed.

SIMULATOR TIME OUT: The simulator took too long to reach plateau while running a Simulator Vapor test.

1. Attempt the test again.
2. Ensure the simulator head is properly threaded onto the simulator jar.
3. Inspect the simulator O-ring and jar for damage.
4. Ensure that the quick connects on the simulator head are properly connected to the ports on the simulator tower.
5. Open the cover and ensure the tubing is properly connected and free from kinks.

STANDARD DEVIATION OUT OF RANGE: During an Accuracy and Precision Check, the standard deviation result is greater than 0.0020.

1. Try the test again.
2. Ensure the simulator is properly connected to the simulator tower.
3. Ensure the simulator jar is properly threaded to the simulator head.
4. Inspect the simulator O-ring and jar for damage.
5. Open the instrument cover and ensure the tubing is properly connected and not kinked.
6. DMT Supervisors may perform an Accuracy and Precision Test to assess the simulator vapor concentration.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No. ALC_D200_1_Version 1	Approved by: Lab Director	Effective Date: 08262015 Status: Active	Page 22 of 27
----------------------------------	------------------------------	---	---------------

PRINTER PROBLEMS: The instrument is unable to communicate with the printer.

1. Ensure the USB cable is connected to both the DataMaster DMT and the printer.
2. Ensure the printer is on and has ink and paper.
3. Turn the instrument off, wait one (1) minute then turn it on and attempt to reprint.
4. A different printer may be used; however the DataMaster DMT requires a very specific print language which is not compatible with many printers. Contact DataMaster Technical Services.

RADIO FREQUENCY DETECTED: A radio frequency transmission has been detected in the testing environment.

1. Ensure that there are no active transmitters in the processing area.
2. If transmissions from dispatch are causing radio frequency issues, advise officers of possible "RF Detected" errors when performing breath tests due to dispatch transmissions.
3. If RF Detected is a frequent problem, contact DataMaster Technical Services.

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 23 of 27

EXAMPLE REPORTS

SOLUTION CHANGE

DataMaster DMT: 103809
Location: VFL
Date: 06/09/2015
Performed by: ROBERT DRISCOLL



Accuracy and Precision Check

Concentration = 0.100 g/210L
Lot # = 15-06-100
Range = 0.095 - 0.105
Average = 0.097 g/210L
Std Dev = 0.0004

Simulator Temperature: 33.9°C

Performed by _____

Date 06/09/2015

DMT Serial Number #103809

Page 1 of 1

06/09/2015 3:13 PM

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 25 of 27

DIAGNOSTIC RESULT

DataMaster DMT: 103809
Location: VFL
Calibration Date: 05/13/2015
Certification Date: 05/13/2015
Installation Date: 06/11/2015
Test Date: 06/24/2015
Test Time: 10:00:35



VERSIONS
DMT: 2.00
PIC: 2.06
Modem: 2.6
Questions: 2.1

TEMPERATURES

Sample Chamber = 49.2°C
Breath Tube = 48.0°C
Digital Sim = 33.9°C

SETTINGS

Lamp Voltage = 1.72 V
Cooler Voltage = 1.60 V
Bias Voltage = 80 V
Chopper Freq = 551 Hz

PUMP INFO

Flow Rate = 5.974 L/M

DETECTOR INFO

	PUMP ON	OFF
MAX (V)	0.0809	0.0890
MIN (V)	0.0778	0.0813

FILTER INFO

Filter 1	0.088	Zero = true
Filter 2	0.295	Zero = true
Filter 3	0.008	Zero = true

CALIBRATION CHECK

Xq = 0.078 0.11%

VERMONT FORENSIC LABORATORY

DataMaster DMT Supervisor Manual

Doc. No.
ALC_D200_1_Version 1

Approved by:
Lab Director

Effective Date:
08262015
Status: Active

Page 26 of 27



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMaster DMT: 103809

Location: VFL

Date: 06/10/2015

Time: 14:44:41

SUPERVISOR NAME:
ROBERT DRISCOLL

SOLUTION LOT #: 15-06-100

SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	14:45
CALIBRATION CHECK	PASSED	14:45
SIMULATOR VAPOR 33.9°C	0.099	14:46
SIMULATOR VAPOR 33.9°C	0.099	14:47
SIMULATOR VAPOR 33.8°C	0.099	14:48
SIMULATOR VAPOR 33.9°C	0.099	14:49
SIMULATOR VAPOR 33.9°C	0.099	14:51
SIMULATOR VAPOR 33.9°C	0.099	14:52
SIMULATOR VAPOR 33.8°C	0.098	14:53
SIMULATOR VAPOR 33.8°C	0.099	14:54
SIMULATOR VAPOR 33.9°C	0.099	14:55
SIMULATOR VAPOR 33.9°C	0.098	14:57
BLANK TEST	0.000	14:57

Average = 0.098
Std Dev = 0.0004

