

 Iowa DCI Crime Laboratory Official Document	Title: Certification or Re-certification of the DataMaster DMT	
	Document ID: SOP BAC-14	Revision #: 2
	Effective Date: 6-22-10	Applies To: Breath Alcohol
	Reason for Revision/Sections Revised: 4.3.2, 4.5, 5.3, and 5.4.3; minor changes to Attachments 1 and 2	

PURPOSE: State law requires that the Division of Criminal Investigation Criminalistics Laboratory certify each instrument on a yearly basis. (Re)-Certification is necessary to insure the continued proper operation, accuracy and precision of the DataMaster DMT.

DEFINITIONS:

“**Supervisor mode**” – A function of the DataMaster DMT which allows a technician the ability to test the instrument using wet bath standards

“**Margin of Error**” – A measure, quantity or degree of difference between an observed value and the true value of a quantity

1.0 SUMMARY

The Iowa Department of Public Safety, Division of Criminal Investigation, Criminalistics Laboratory is responsible for the certification of any evidential breath-testing instrument used within the state of Iowa. One such instrument approved for use within the state is the DataMaster DMT manufactured by National Patent Analytical Systems, Inc. (see 157-7.2(3)). All devices so used must be certified to be in proper working order within a period of one year immediately preceding use. (see 157-7.1(1))

2.0 REAGENTS APPARATUS and EQUIPMENT

- 2.1 Ethanol solutions (refer to SOP BAC-09 or SOP BAC-12)
- 2.2 Alcohol simulators (Guth 10-4D or equivalent)
- 2.3 Assortment of tools including, but not limited to: screwdrivers, pliers, wrenches, voltmeter, etc.
- 2.4 Spare parts for the DataMaster DMT

3.0 SAFETY CONSIDERATIONS

- 3.1 Exercise normal safety precautions when working with electricity and the possibility of electrical shock.

4.0 PROCEDURE

- 4.1 Certification of the instrument is valid for a period of one year or until the date of the instruments next certification, whichever comes first.
- 4.2 Re-certification of an instrument may be performed either on-site or at the Division of Criminal Investigation Criminalistics Laboratory.
- 4.3 Minimum requirements for re-certification include (in no particular order):
 - 4.3.1 A diagnostic test indicating that the instrument is within specifications established by the manufacture.
 - 4.3.2 Linearity Check - A minimum of a two (2) ethanol solutions with concentrations between 0.010 and 0.300 g/210L breath ran, with a minimum of three times per concentration with the results of these tests within 0.004 or 5% of the expected g/210L Breath.
 - 4.3.3 Radio Frequency Interference test - using an officer's radio or a portable handheld two-way radio test to check that the RFI setting is acceptable. If no RFI is obtained, reset the RFI sensitivity and retest.
 - 4.3.4 Interference Test – a solution containing acetone, isopropanol or both in water run under “Supervisor Mode” – results shall indicate that an interference was detected.
 - 4.3.5 Completed Breath Test – The Criminalist shall perform a breath test entering fictitious information (simulated data similar to the real data an officer would enter) into the DataMaster. The test must show that a zero alcohol reading was obtained, that the minimum breath volume is set properly and that the DataMaster printout is showing all relevant information (results, graph, typed in information, etc.).
- 4.4 Additional maintenance may be necessary to insure that the instrument is in proper working order. Examples of these may include:
 - 4.4.1 Replacement of parts
 - 4.4.2 Adjustment of voltages
 - 4.4.3 Additional ethanol solutions performed at different alcohol concentrations
 - 4.4.4 Recalibration of the DataMaster
- 4.5 After examination of the DataMaster DMT, the original Official Certification Report (Attachment 2) will be provided to both the appropriate county attorney and the Iowa Department of Transportation.

Additionally, a copy will be maintained by the DCI Laboratory. As an alternative to providing hardcopies of these reports, the DCI Laboratory may elect to provide this report on a website in a PDF file format.

5.0 QUALITY CONTROL

- 5.1 Ethanol solutions must be prepared fresh after fourteen (14) days of use or earlier.
- 5.2 Prepared ethanol solutions shall be documented on the “Ethanol Solution Preparation Log” (Attachment 3) which contains:

- 5.2.1 Date the solution was prepared
- 5.2.2 Solution number
- 5.2.3 Concentration of the solution
- 5.2.4 Control or Lot numbers of the purchased ethanol standard used to make the solution
- 5.2.5 Initials of the analyst who prepared the solution

Prepared ethanol solutions may also be entered into the current LIMS.

- 5.3 Purchased ethanol standards are typically accompanied by a “Certificate of Analysis” supplied by the manufacturer. The Division of Criminal Investigation – Breath Alcohol Section shall retain these certificates within the DCI Laboratory.
- 5.4 The margin of error of the instrument will be determined at the time of certification.
 - 5.4.1 These calculations may be done by the Criminalist or the DataMaster DMT.
 - 5.4.2 For alcohol concentrations 0.080 g/210L and below, subtract the average of the simulator results from the expected alcohol concentration.
 - 5.4.3 For alcohol concentrations 0.081 g/210L and greater, take the average of the simulator results and subtract this from the expected concentration, then divide this value by the expected concentration and then multiply by 100.
 - 5.4.4 Determine this for each level of simulator tested.
 - 5.4.5 The margin of error shall be no greater than +/- 0.004 or 5% which ever is greater.
- 5.5 Appropriate data generated by the DataMaster DMT is to be saved and kept in a file located at the Division of Criminal Investigation Crime Laboratory – Breath Alcohol Section, along with the certification/re-certification report for that particular instrument. This data may include, but is not limited to:

- 5.5.1 A copy of the diagnostic test
- 5.5.2 Results of the simulator test(s)
- 5.5.3 A completed DMT Certification check sheet (Attachment 1)
- 5.5.4 Any other information collected by the Criminalist used to make a determination that the instrument is in proper working order.

5.6 The printouts generated by the DataMaster shall also be scanned into the appropriate instrument file within the LIMS system currently in use at the DCI Laboratory.

5.7 The maintenance record shall also be completed within the LIMS recording the date the instrument was (re)certified and what was done, if anything to the DataMaster.

6.0 COMMENTS

Re-certification of the DataMaster DMT may occur more frequently than a period of once a year.

7.0 REFERENCES

7.1 Iowa Administrative code Chapter 661

DMT Certification Check sheet

DataMaster DMT Serial Number _____ Date _____

Location _____

Criminalist Name _____

DIAGNOSTIC TEST ☐ PASS ☐ FAIL ERROR MESSAGE _____☐ INITIAL STANDARD CHECK

CONC _____	TEST 1 _____	RECALIBRATED ☐ YES ☐ NO
SOLN NUM _____	TEST 2 _____	
SIM S/N _____	TEST 3 _____	
	TEST 4 _____	
	TEST 5 _____	
	MOE _____	

VOLTAGE CHECKS

SAMPLE CELL BETWEEN (44-52) DEGREES	☐ YES ☐ NO
BREATH TUBE BETWEEN (38-50) DEGREES	☐ YES ☐ NO
CHOPPER FREQ. BETWEEN (525-575 Hz)	☐ YES ☐ NO ☐ ADJ _____ Init Hz _____ Final Hz
DETECTOR VOLT BETWEEN (0 – +0.400 V)	☐ YES ☐ NO ☐ ADJ _____ Init V _____ Final V
BAROMETER VERIFIED	Actual _____ Value in Diag _____ Reset ☐

DIAGNOSTIC TEST (if necessary) ☐ PASS ☐ FAIL ☐ NOT APPLICABLELINEARITY CHECK (1st one may be same as INITIAL STANDARD CHECK if not recalibrated or if no adjustments were made to the voltages listed above)

CONC _____	CONC _____	CONC _____	CONC _____
SOLN NUM _____	SOLN NUM _____	SOLN NUM _____	SOLN NUM _____
SIM S/N _____	SIM S/N _____	SIM S/N _____	SIM S/N _____
TEST 1 _____	TEST 1 _____	TEST 1 _____	TEST 1 _____
TEST 2 _____	TEST 2 _____	TEST 2 _____	TEST 2 _____
TEST 3 _____	TEST 3 _____	TEST 3 _____	TEST 3 _____
TEST 4 _____	TEST 4 _____	TEST 4 _____	TEST 4 _____
TEST 5 _____	TEST 5 _____	TEST 5 _____	TEST 5 _____
MOE _____	MOE _____	MOE _____	MOE _____

RFI CHECK	☐ PASS	☐ FAIL	☐ ADJUSTED	☐ PASS
INTERFERENCE CHECK	☐ PASS	☐ FAIL		
ZERO BREATH TEST	☐ PASS	☐ FAIL		

REVIEWED BY:

RE-CERTIFIED	☐ YES	☐ NO
CERTIFICATION DATE ENTERED INTO DMT	☐ YES	_____

NOTES:

SIGNATURE OF PERSON PERFORMING INSPECTION

Attachment 1

**Official Certification Of
Evidential Breath Testing Instrument**
Iowa Department of Public Safety
DCI Criminalistics Laboratory
2240 S. Ankeny Blvd.
Ankeny, Iowa 50023
(515) 725-1500

Date

See Code of Iowa Section 691.2 Presumption of Qualification of Employee.
This instrument certification has been handled in conformity with the rules of the DCI Laboratory as cited in the Iowa Administrative
Code (661 - Chapter 7).

Instrument: NPAS DataMaster DMT
S/N

Certifying Criminalist(s): _____

NPAS DataMaster DMT with serial number _____ was examined and is hereby certified
to be in proper working order to perform direct breath testing for alcohol on _____.
This certificate is in effect for a period of one year, Iowa Administrative Code 661-7.2(1).

The internal standard for this instrument will read 0. _____ $\pm$ 4.0%.

The margin of error at _____ g/210L was found to be _____ g/210L.

The margin of error at _____ g/210L was found to be _____ g/210L.

The margin of error at _____ g/210L was found to be _____.%

The margin of error at _____ g/210L was found to be _____.%

The margin of error established on this instrument was determined to be less
than $\pm$ 0.004 or $\pm$ 5% (grams/210L), whichever is greater.

Instrument Assignment

		NPAS DataMaster DMT, serial number _____, assigned to the	
Criminalist examining DataMaster:			

Attachment 2

Ethanol Solution Preparation Log

[illegible]

Attachment 3