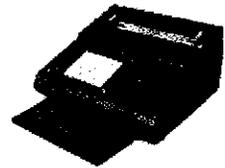
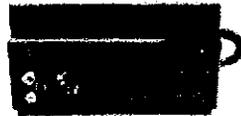
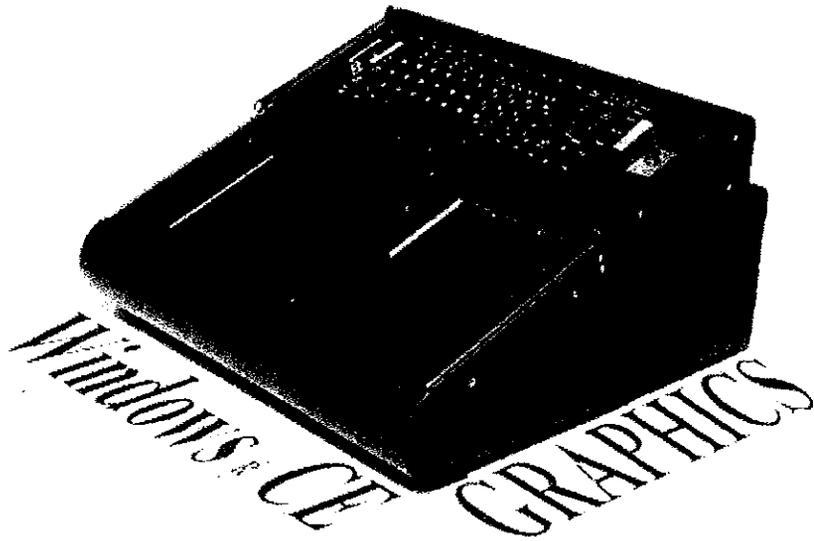


DataMaster

Often copied, never beaten

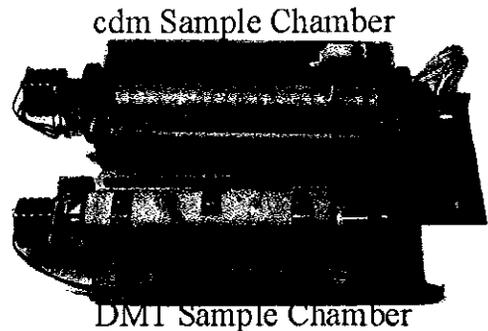


The DataMaster DMT™ combines the accuracy, reliability and specificity of the previous DataMaster models in a new package that can be configured to any program requirements now and in the future.

DataMaster DMT™ Features and Benefits

Analytical

The DataMaster DMT™ uses the judicially accepted method of infrared spectroscopy to determine breath alcohol levels. Current DataMaster models are renowned for their accuracy and repeatability. The DMT uses the same proven technologies. The detector is a thermo-electrically-cooled PbSe detector regulated to operate at 0°C. Regulating the operating temperature of the detector allows for greater sensitivity while maintaining a stable detector output. This enhances the precision, repeatability and low-level performance of the DMT. A stepper motor precisely controls all the optical filters (including the quartz internal standard). The use of narrow bandpass (10 nanometer) optical filters at 3.44, 3.37 and 3.50 micron allows the passage of a limited frequency range of infrared energy. This makes the DMT highly specific to ethanol to the exclusion of other alcohols and interfering compounds. The long life gray body infrared source generates very little visible light. This maximizes power usage and reduces instrument temperatures giving the DMT a high level of stability and efficiency.



Signal Processing

A powerful 32 bit, 206 Mhz processor administers signal processing. This facilitates the use of a short sample path length (57cm) and a small sample chamber volume (23cc). This allows for an accurate measurement of the deep lung sample across a wide range of blowing patterns and subject vital lung capacities.

Breath Sampling System

The processor permits the use of an advanced breath sampling system. This new system accurately measures the breath flow rate and volume, including negative flow rates, eliminating any questions about sample acceptance.

Data Entry Screen

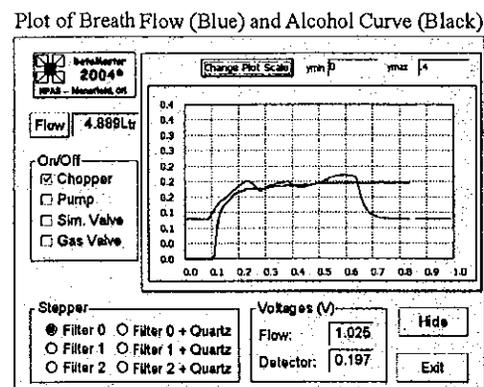
DataMaster 2004®
SP-100 - Mansfield, OH

Subject Test - Data Entry

Subject Name

First Name	CLIFFORD
Middle Initial	F
Last Name	BROEDERMEISTER

<TAB> - Moves between fields <SPACE> - Presses buttons



LCD Screen

Taking advantage of the power of the processor, the versatility of the breath sampling system and the new full color graphics screen we can now (optionally) display a subject's breath flow curve in real time along with the alcohol absorption curve. This greatly enhances an operator's ability to determine the subject's level of co-operation during a test. This information can be part of a test ticket (when using an external printer) or be stored electronically for later retrieval.

The full graphics touch screen allows for a better interface with operators. Touching the buttons on the display now accesses all the special operation keys of previous DataMaster models. This allows for the use of a standard PS2 keyboard for data entry. A compact keyboard is standard with the unit, but any PS2 keyboard can be used. Optionally documents/statements that must be read to a test subject can now be displayed on the screen as part of the test.

Serviceability

A major design feature of the DataMaster DMT™ is serviceability. All user serviceable components are accessible by means of hinged access panels. Using conventionally mounted electronic components, all electronic service can be done without investing in expensive specialized service tools.

The processor and display also allows for the use of digitally controlled potentiometers. In the technician mode all the critical voltages in the instrument are displayed on the LCD screen and are adjustable WITHOUT THE NEED TO OPEN THE INSTRUMENT!

The screenshot shows the following settings and status:

- Temp. (C):** Sample Cell: 48.9, Sim. Hoss: 0.0, Breath Tube: 2.3, Sim. Temp: 0.00
- Flow:** 0.000Ltr
- On/Off:** Chopper (checked), Pump, Sim. Valve, Gas Valve
- Barometer:** Current: 1003.7, Calibrate: 0
- Tuning (V):** Lamp: 2.82, Bias: 120.02, Cooler: 1.99
- Chopper:** 485
- Stepper:** Filter 0 (checked), Filter 0 + Quartz, Filter 1, Filter 1 + Quartz, Filter 2, Filter 2 + Quartz
- Voltages (V):** Flow: 1.025, Detector: -0.093

Communications

Remote communication with the instrument is done with either a high-speed modem (up to 56K) or by Ethernet. Optionally both types are supported. The processor platform and software allows for easy integration in Wide Area Networks (WAN's) through Ethernet.



Interactive communication with the instrument is greatly enhanced allowing for more efficient remote troubleshooting including voltage adjustments. Using flash capable memory, program and instrument software changes can be done remotely.

Through the use of industry recognized technology we are able to adapt the instrument more easily to fit your future needs. A serial (RS-232) port is standard to allow communication with digital simulators. The external printer port allows for printing on a range of off the shelf printers. Optionally it will also print in color, including graphs. As a further option, communication with a wide variety of hardware can be done by means of USB ports.

Calibration

Factory calibration of the DataMaster DMT™ uses a single point calibration method and takes less than five minutes. An internal quartz standard checks the calibration of the instrument with every test. Wet bath external simulation is standard on each instrument with the option of dry-gas with automatic barometric compensation.

Software

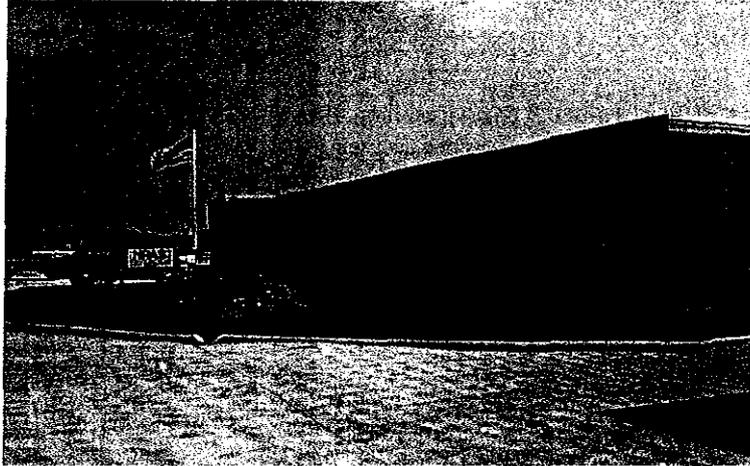
The DataMaster DMT™ software is built on the Microsoft® .NET framework. This platform enhances the DMT's ability to be incorporated in a Wide Area Network (WAN). It also provides for a familiar graphical user interface (GUI) making the DMT operator friendly. The software platform, GUI, processor and LCD screen allows for the option of retrieving previous tests from each instrument. Extensive subject and diagnostic test data can be stored by the instrument virtually indefinitely for later retrieval and reprinting.

The three screenshots show the following screens:

- Ready for a Test:** Shows a large circular graphic with a car and a martini glass. Status: Ready, SIM: 48.86 C, BAR: 1003.7mmHg. Time: 05:02:38 PM, Date: 21-Apr-2004.
- Setup Screen:** Shows 'Setup Options' with tabs for Date/Time, Simulator, Subject, Calibrate, Misc. Mode: Auto (checked), Manual. Check: Yes (checked), No. Standard: Wet 0.100 (Nominal), Dry 200 (Parts per Million). Dig. Sim.: Guth (checked), Repco, None. Buttons: OK, CANCEL.
- Test Retrieval Screen:** Shows 'Last Ticket', 'Options', and 'Calibration Factors'. Includes a table of test results:

Blank Test	Intermittent Standard	Perfect Sample	Blank Test
0.008	17:03	0.145	17:05
0.000	17:05	0.000	17:06

 Buttons: Print, Cancel.



Service and Training

NPAS offers factory service with an average 1-week turnaround. Or, you can use your nearest factory authorized service center. Our staff of experts are normally available from 8:00 a.m. to 5:00 p.m. EST to provide free, unlimited technical support via telephone.

Our customized training service ranges from basic operator and technician training to an approved service level. We can give you the confidence and expertise to service your program at any desired (or required) level of competence.

DataMaster DMT™ Specifications:

Operating System:

Microsoft Windows CE®.NET Embedded in Processor

Memory:

64 MB Flash Memory
64 MB DRAM Memory
Currently Expandable up to 4GB (optionally)

Analytical:

Infrared Spectroscopy @ 3.44, 3.37 and 3.50 micron
using narrow (10 nanometer) bandpass filters
Sample Chamber volume: 23cc
Sample chamber length: 57cm
Range: .000 to .600 BrAC
Accuracy: .002 @ .100BrAC

Physical:

Lightweight: 19 pounds
Modular construction
Finish: Hard Anodized High Strength Aluminum
Small Size: 15x15x5
Hinged Access Panels

Electronic:

32 bit, 400 MHz Intel RISC Embedded CPU
Full color, Touch Screen, 6.5 inch LCD

Power Input:

Self contained
User Selectable
AC Voltage Input: 100 - 240VAC 47-63 Hz
DC Voltage Input: 12VDC

Outputs:

USB Printer Output
Serial Output (RS-232)
USB outputs
High Speed Modem (up to 56K)
Ethernet Capable (optional)

Environmental:

Operating Temperature: TBD

Patents Pending

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