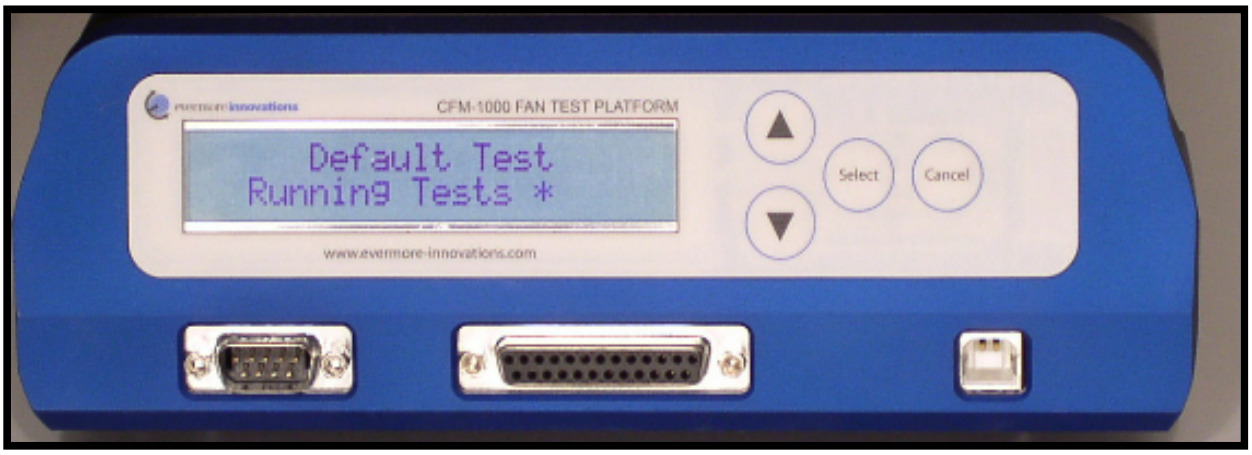
CFM-1000 Fan Test Platform

The CFM-1000 is a comprehensive fan test platform design to characterize the electrical properties of most DC powered fans. Fan characterization is achieved by the execution of a suite of tests that can be used to build a complete datasheet of the fan's performance. Stand-alone tests can be uploaded to the CFM-1000 and run in stand-alone mode via the front panel for On-the-Line Quality Assurance Testing. Results can later be downloaded via USB after multiple tests and exported to Excel or Crystal Reports.

The CFM-1000 is configured via a PC running an included Windows-based configuration utility.



The CFM-1000 configuration software allows the user to configure specific tests that will be performed on each fan. Tests can be configured to run in nested loops, repeating the same types of tests in the same sequence multiple times on 4 channels simultaneously.

Key Features:

One-button characterization of most DC fans (3 to 24 V, up to 70 W) to 3.5 significant digits
Supports 2-wire, 3-wire, 4-wire, 5-wire, 6-wire, and Locked Rotor fans
Includes NIST Traceable Calibration Certificate
Includes optional Bar-Code scanner for recording production fan tests

Key Applications:

Stand-alone tests with internal result storage for manufacturing, downloadable via USB to Host PC

- **LEDs on front panel give immediate feedback on a channel's pass/fail status.**
- **Large memory capacity allows long tests to run overnight**

GUI allows for easy modification of tests on a benchtop for R&D
Fan Comparison feature allows Sales it to show advantages over competitors

- **Tests are easy to configure and upload**
- **Allows comparison of up to four fans with the same stimulation**
- **Shows Spinup Time, RPM and Current Draw all in one place**
- **Small size makes it portable enough to move around the lab or the city**

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CFM-1000 Specifications

(Applicable range/accuracy is given in parentheses)

Fan Performance Characterization

- **Programmable Fan Operation**
  - **PWM Frequency (0 to 57.6 kHz)**
  - **PWM Voltage (Low 0 to 4 VDC, High 1.5 to 27 VDC)**
  - **PWM Pullup (1, 5, 10 or 20 kOhm, 2.5 to 27 VDC)**
  - **PWM Duty Cycle (0 to 100%)**
  - **Tach Pullup (1, 5, 10 or 20 kOhm, 2.5 to 27 VDC)**
  - **Fan Supply Voltage (2.5 to 27 VDC, up to 70 W)**
- **Mean Time Between Failures**
- **Tachometer (Supports 1 or 2)**
  - **RPM (0 to 40000) (+/- 1 RPM)**
  - **Spinup Time (to steady-state RPM) (+/- .05 seconds)**
  - **Max Inrush Current (0 to 10 A) (+/- .1 A)**
  - **Inrush Duration (0 to 500 milliseconds)**
  - **Average Current (0 to 6 A) (+/- .1 A)**
- **PWM Leakage Current (0 to 500 uA) (+/- 10 uA)**
- **Locked Rotor Detection**

Stand-Alone Testing

- **Create Tests on Host PC and run them in Front-Panel Mode, single-button testing**
- **LEDs on Front-Panel indicate Pass/Fail**
- **Download Test Reports and export to Excel or Crystal Reports**

Host PC and Interface

- **Recommended speed** — **500 MHz or higher**
- **Operating System/USB** — **Windows 2000 or XP, USB 1.1 or 2.0**

Mechanical Dimensions

- **Size and Weight** — **24 x 37 x 8 cm (9” x 14.5” x 3”), 3.6 kgs (8 lbs)**
- **Operating Temperature** — **10°C to 40°C (50°F to 104°F)**
- **AC Power** — **100 to 240 VAC, 50 to 60 Hz, 1.5 A Max.**

Sample Test Report:

Fan Test Results

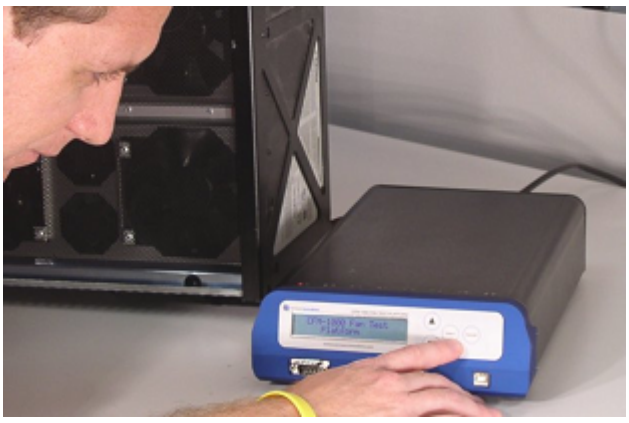
Test Started: Sun Aug 14 15:55:57 2005

Channel 1 Results All Passed

Control Method: PWM
PWM configuration Freq 50.0 kHz Low 0.0V High 5.0V
Tach Pullup Voltage: 5.0V Strength 1.0k Number of Tachs 1

Duty Cycle 100.0% Duration 9.0s

Parameter	Min	Max	Actual	Result
Spinup Time (s)	0.1	7.0	4.3	Pass
Spin Rate (RPM)	10004	12004	10913	Pass
Avg Current (A)	1.0	5.0	2.49	Pass
Max Inrush (A)		5.7	4.62	Pass
Inrush Duration (ms)		1.0	0.00	Pass



Note: Specifications are subject to change without notice.

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