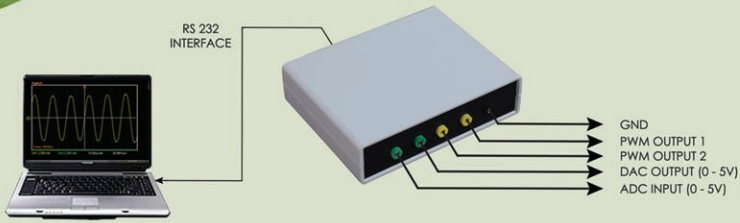
Real Time MATLAB Interface Lab

The VMAT Controller is specially designed for Real time interface for MATLAB - Simulink, Orcad Simulation software.



FEATURES :

* Based on advanced Risc Micro controller, a useful tool for researchers to interface their Hardware with matlab to research in the fields like process control loop, DC - DC converter, DC motor controller, control Engineering etc.,
* Dual PWM Outputs (250 KHz)
* Single channel ADC Input (0-5V)
* Single channel DAC Output (0-5V)
* PC interface through RS232
* Few sample Hardware setups to Interface with VMAT - 01 / 02

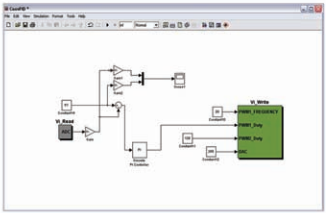
OPTIONAL

* 6 PWM Outputs available in VMAT - 02

MATLAB GUI APPLICATIONS

The GUI block proven in Simulink can be immediately downloaded and tested with this controller.

This will be an ideal tool for Researchers in Power Electronics, Drives, Process Control Instrumentation etc.,



Vi Microsystems Pvt. Ltd.,
Plot No : 75, Electronics Estate, Perungudi, Chennai - 600 096
Ph : 91-44-2496 1842, 2496 1852, Fax : 91-44-2496 1536
Mail : sales@vimicrosystems.com, Web : www.vimicrosystems.com

We offer general purpose hardware for Universel DC –DC Converter, PM DC Motor Controller and Real Time Temperature Controller as Reference study for the students.

FEW SAMPLE HARDWARE SETUP TO INTERFACE WITH VMAT - 01

1. UNIVERSEL DC– DC CONVERTER

This Universal hardware consists of MOSFET devices which can be wired by the research students to form any one topology.
It is designed to work with VMAT - 01 Under MATLAB Environment

* DC - DC Buck Converter (15V to 5V DC)
* DC - DC Boost Converter (15V to 30VDC)
* DC - DC Buck Boost Converter (15V to 0-30V)
* DC - DC Forward Converter (15V to 5VDC)
* DC - DC Fly Back Converter (15VDC to 5 VDC)
* Any other new topology configured by the research student
* MATLAB Block and Hardware Block can be mixed to prove new concept.
  For example : The Hardware Block like PWM block or PID Block can be replaced by MATLAB's own PWM or PID Blocks.

2. CLOSED LOOP CONTROL OF PMDC MOTOR CONTROLLER

This module consists of MOSFET based single Quadrant Chopper Power Circuit and builtin PWM Controller with Closed Loop facility for Motor Control.

* 24V DC Input for Power Circuit
* Open Loop and Closed Loop Control

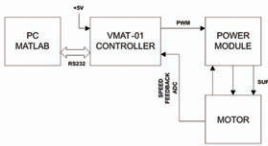
In this unit, PWM block or PID Controller can be replaced by Matlab – orcad software through Vmat-01 Controller for Motor Control Experiment like simulation of transfer function of DC servo motor in Matlab and real time interface.

3. REAL TIME TEMPERATURE CONTROLLER

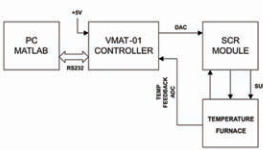
This module consists of SCR Based Power Source, Temperature Furnace, Temperature Sensor Etc.,

In this Unit, PWM Block or Pid Controller can be replaced by Matlab – Orcad Software through VMAT-01 controller for Temperature Control Application.

APPLICATION BLOCK DIAGRAM



Closed Loop DC Motor Control



Closed Loop Temperature Control

Vi Microsystems Pvt. Ltd.,
Plot No : 75, Electronics Estate, Perungudi, Chennai - 600 096
Ph : 91-44-2496 1842, 2496 1852, Fax : 91-44-2496 1536
Mail : sales@vimicrosystems.com, Web : www.vimicrosystems.com