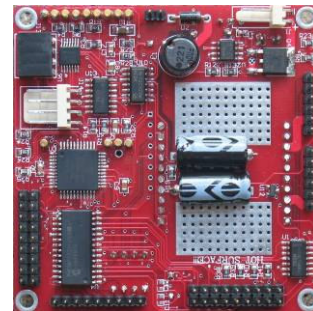# iMicro V2.0 Robotic Motion Controller

Key Features

- **Two** DC motor speed/position control channels (Dedicated Motion Controller and DMOS H-Bridge Driver with Max DC Current of **5A** per channel).
- **Sixteen** RC servo channels
- **Sixteen** TTL digital IO ports (individually configurable as input or output).
- **Eight** Analog Input ports.
- Support Radiometrix RF modules.
- **One** RS-232 port.
- **One** I2C port.
- **Switching power supply** for best battery power efficiency.
- **40Mhz** Microchip processor.
- **64K** program memory, 4K data memory.
- **Easy** programming and debugging using C and MPLAB IDE.
- **Compact** size of 75mmX75mm

Top

Bottom

Descriptions and Applications

iMicro is a high-quality compact 2-axis robotic motion controller designed for building wheeled robots, legged robots, motion control projects and microcontroller projects. It has 3 processors to do different tasks.
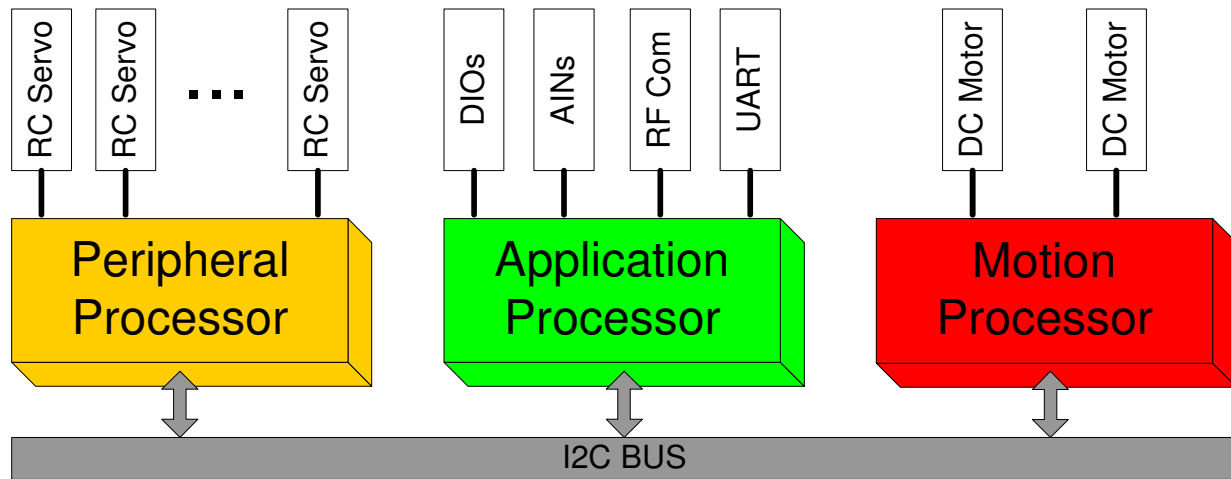
Its on-board DC motor controller consists of a 16-bit motion processor with DMOS H-bridge driver. It uses incremental encoder as feedback to control the speed of the motor. The PID parameters of the controller are tunable via software.

Its peripheral processor provides the RC servo control and communication function. Radiometrix RF module is supported directly to allow point-to-point communication.

The main processor that is to run user application is one 8-bit 40Mhz Microchip processor (18F Family with 64K program memory and 4K data memory). It is supported by ANSI C compiler and IDE with debugging capability and numerous online resources at Microchip website.

Typical robotic applications of iMicro controller include **FIRA Soccer Robot**, **International Robotic Challenge Robot, Robot Colony** (Singapore Robotic Game), **Legged Robot**, **Sumo Robot** etc.

iMicro Hardware Architecture

Technical Specification

Item	Specification	iMicro-F20	iMicro-RC20
Power Supply Voltage	7V – 30V	yes	yes
Power Supply type	Switching Regulator	yes	yes
Power Consumption	2W (without motor)	yes	yes
Processor Speed	40MHz	yes	yes
5V regulated out current	Max 800mA	yes	yes
Digital IO port	TTL/CMOS X 16	yes	yes
Analog Input	0V - 5V X 8	yes	yes
RC Servo PWM Pulse	TTL, 25Hz (1.5ms Neutral)	yes	yes
DC motor PWM frequency	40Khz	yes	no
DC Motor DC current	Max DC Current = 5Amp / Motor	yes	no
DC Motor Pulse current	Max Pulse Current = 20Amp /Motor	yes	no

Order Information

Our Part No.	Description	Price	**Farnell** Order Code
iMicro-F20	Full Version with DC Motor Control Module	SGD600/pc	1287350
iMicro-RC20	Reduced version without DC Motor Control	SGD400/pc	1287351

Manufacturer:	**Authorized Sole Distributor:**
iNOVA Microsystems Pte Ltd #02-06, AMK Tech II Blk 5, AMK Industrial Park 2A Singapore 567760 Tel: (65)64841007 Fax: (65)62344235 Email: sales@inovamicro.com	Singapore: Farnell Components Pte Ltd Malaysia: Farnell Components Pte Ltd Thailand: Farnell Components Pte Ltd Worldwide: iNOVA Microsystems Pte Ltd