**Integrated Design Platform**

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**Motion Control Engine**
- Sensorless FOC
- App S/N
- Max A/D
- SPWM
- Traces
- Sensors
- Rings
- MCE Program
- 8051: PC-MCE Communications

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**Features at a Glance**

**Digital Control**
- Motion Control Engine™ eliminates hall effect sensors
- Integrated microcontroller enables application layer software development
- Graphical algorithm eliminates coding

**Analog Interface**
- Embedded Analog Signal Engine™ integrates all signal conditioning and conversion circuits for single, current shunt
- Industry-leading high voltage ICs

**Variable Speed, Sensorless Motor Control**
IR’s iMOTION™ delivers everything you need to design a complete motion control subsystem for variable-speed three-phase motor applications.

From the front panel and power entry to the motor terminals, iMOTION™ brings powerful digital, analog and power silicon complete with algorithms, development software and design tools.

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**IRMCS1271**
- Complete PM motor design platform
- Featuring IRMCF171 Digital Control IC
- 230V input
- Up to 1000W depending on module
- Features SIP1A module
- Single or Leg Shunt
- MCE Wizard
- MCE Designer
- Software support files including 8051 sample code

**IRMCS1671**
- Complete PM motor design platform
- Featuring IRMCF171 Digital Control IC
- 230V input
- Up to 1000W depending on module
- Features 12x12mm µIPM surface mount module
- Leg Shunt
- MCE Wizard
- MCE Designer
- Software support files including 8051 sample code

**IRMCS1043**
- Complete PM motor design platform with input PFC control
- Featuring IRMCF143 Digital Control IC
- 230V input
- 1500W
- Features SIP1A module
- Single Shunt
- MCE Wizard
- MCE Designer
- Software support files including 8051 sample code

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**For additional reference designs, please contact your sales representative.**

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**With iMOTION™ you can design a system that:**
- Turns a motor for evaluation in days instead of weeks
- Performs more efficiently without added system cost
- Helps you meet if not beat aggressive design schedules

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*IR’s iMOTION™ (ai mo shan), representing the intelligent motion control, is a trademark of International Rectifier Corp.*
### iMOTION Features and Benefits

**Variable Speed Drive**
- Optimum control
- Maximum efficiency
- Retrofit a fixed speed system

**Built-In Field-Oriented Control**
- Maximum torque-per-amp
- Torque and speed feedback for higher level features and protections
- For induction motors, lower currents than V/Hz control
- Zero speed controller

**Add Power Factor Correction**
- Meet the latest PFC regulations

**Control Up To Two Motors & PFC**
- Choose the right controller for your needs

**Fast, Simplified Design Process**
-.Configuration utility to quickly get your motor running
- Control algorithms embedded in the control IC
- Move on to application testing and hardware design quickly

**Sensorless Drive**
- Eliminates Encoders/Hall Sensors
- Provides higher reliability
- Offers lower cost
- Single shunt for minimum component count

**Novel Two-Core Architecture**
- Highly customizable algorithm
- Graphical design eliminates motor control coding
- Integrated MCU offers monitoring, fault handling, and communication independent of Motor control

**Delivering Energy Savings**
- Designed for energy efficient
  - Permanent Magnet motors
  - Field Oriented Control reduces AC Induction motor currents
  - Variable speed to run system at optimum condition

**Suitable for a Diverse Range of Applications**
- Fans
- Pumps
- Compressors
- Power Tools
- Industrial Motors
- Washers

**Customize for General Purpose Power Inverter Applications**
- Power Generation
- 3-phase PFC

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**Integrated Design Platform**

[Diagram of Integrated Design Platform]

**Integrated Power Module**

[Diagram of Integrated Power Module]

**AC input**

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**Fast, Simplified Design Process**

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**Sensorless Field Oriented Control**

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**Closed Loop Speed Control**

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**Variable Speed Drive**

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**Add Power Factor Correction**

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**Control Up To Two Motors & PFC**

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**Suitable for a Diverse Range of Applications**

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**Customize for General Purpose Power Inverter Applications**

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**Integrated Design Platform**

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**Built-In Field-Oriented Control**

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**Variable Speed Drive**

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**Add Power Factor Correction**

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**Control Up To Two Motors & PFC**

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**Fast, Simplified Design Process**

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**Sensorless Drive**

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**Novel Two-Core Architecture**

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**Delivering Energy Savings**

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**Suitable for a Diverse Range of Applications**

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**Customize for General Purpose Power Inverter Applications**

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