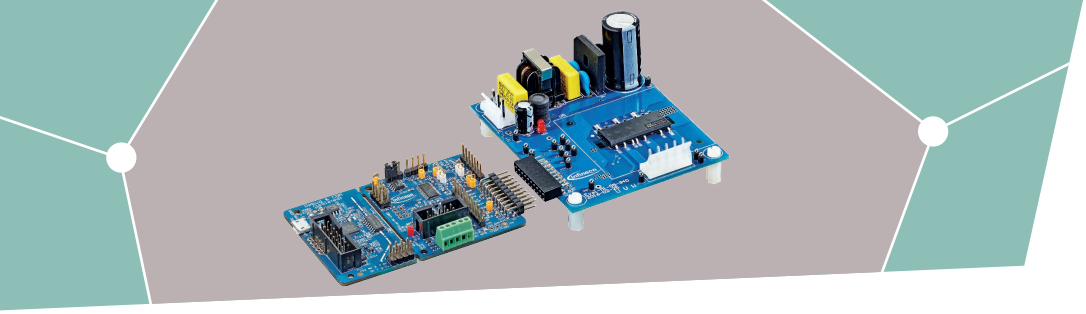


Product Brief

# iMOTION™ MADK platform

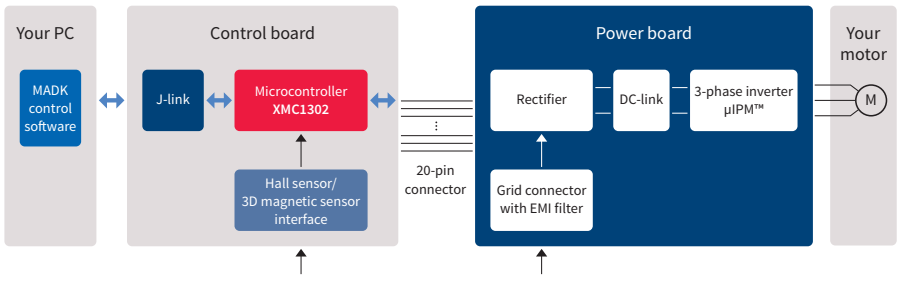
## Complete and scalable system solution for motor drives

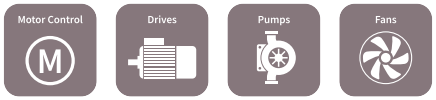
Infineon Technolgies introduces the new iMOTION™ Modular Application Design Kit (MADK) platform for evaluation and testing compact and flexible 3 phase motor drive system solutions.

The iMOTION™ MADK evaluation platform covers 115/230 V motor drive applications up to 300 W. The platform is offering a modular and scalable system solution with 2 different control board options and a range of power boards. One control board option is a standard ARM® Cortex®-M0 Microcontroller XMC1302 with tailored motor control peripherals and MATH hardware accelerator. Another option is an iMOTION™ IRMCK099 digital motion control IC with integrated Motor Control Engine (MCE).

The first iMOTION™ MADK evaluation kits combine two control board options with four different power bards. Using iMOTION™ MADK standardized M1 platform Interface, different control and power boards can be combined in a system that perfectly matches the requirements of the application. This modular approach with a standardized interface between the different controller and bower boards allows users to mix and match for a maximum flexibility and scalability during evaluation and development phase at affordable cost.

### Block diagram with XMC1302 based MADK






www.infineon.com/MADK

### Key benefits

- Easy to set up a complete motor drive system in less than 1 hour
- Fast time to market – reduced design time & effort
- Standard MADK platform M1 interface enables modularity, flexibility and scalability
- Scalable power levels with µIPM™ and µIPM™-DIP

### Key features

- MCU control card with XMC1302 MCU and SEGGER J-Link debug interface
  - µC Probe-based GUI for motor parametrization and tuning with XMC1302
  - FOC motor control Software for XMC1302
  - Fully supported by Infineon's free-of-charge DAVE™ IDE and other 3rd party ARM® IDEs (For XMC 1302)
- Alternatively IRMCK099 Control Card with MCE TOOL V2
  - MCE Designer GUI for motor parametrization and tuning with IRMCK099
  - Hardware implemented FOC algorithm
- 4 different power boards with µIPM™ or µIPM™-DIP with intregrated 500 V or 250 V MOSFET & 600 V Gate-Driver

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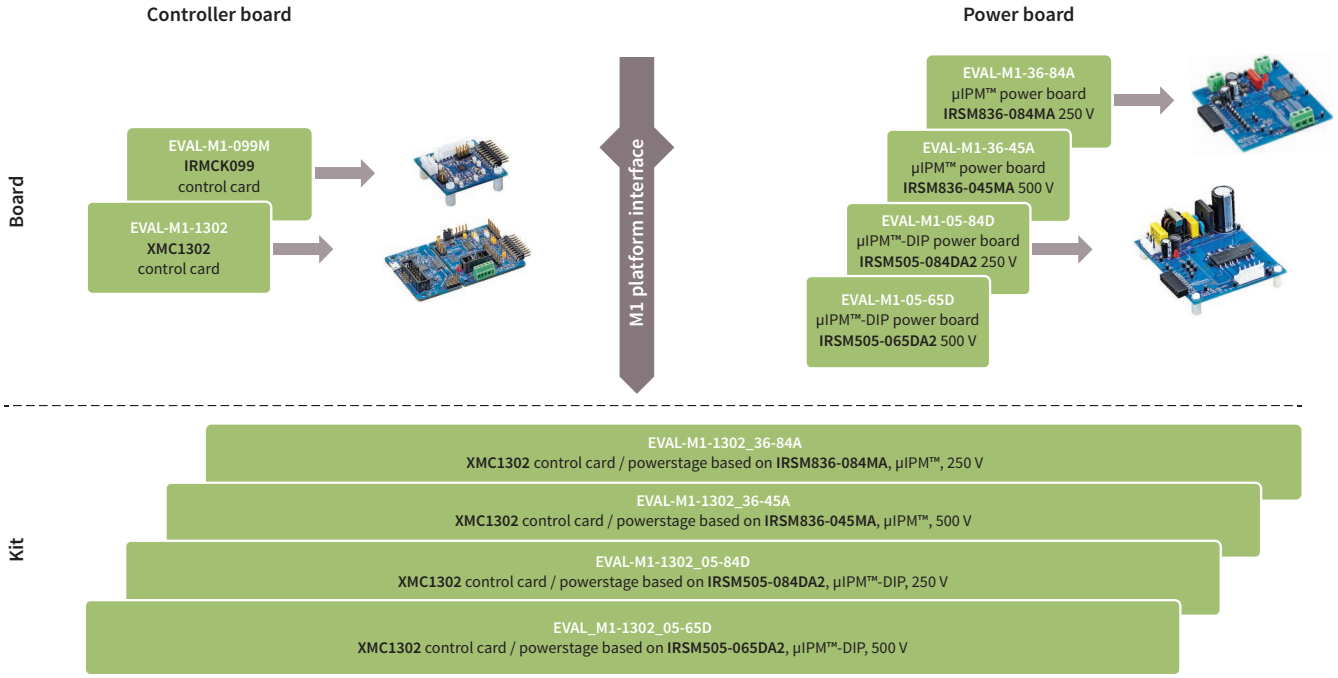


**Full compatibility within M1 platform interface**

## MADK platform evaluation boards & kits

| Evaluation board/kit | Content | OPN | SP number |
|---|---|---|---|
| Eval-M1-05-65D | IRSM505-065DA2 µIPM-DIP, mounted on the board ,3-pole & 5-pole connector | EVALM10565DTOBO1 | SP001591474 |
| Eval-M1-05-84D | IRSM505-084DA2 µIPM-DIP, mounted on the board, 3-pole & 5-pole connector | EVALM10584DTOBO1 | SP001591850 |
| Eval-M1-36-45A | IRSM836-045A µIPM, mounted on the board | EVALM13645ATOBO1 | SP001592052 |
| Eval-M1-36-84A | IRSM836-084A µIPM, mounted on the board | EVALM13684ATOBO1 | SP001592062 |
| Eval-M1-099M | IRMCK099 mounted on the board & MCE TOOL V2 & required. wires | EVALM1099MTOBO1 | SP001591856 |
| Eval-M1-1302 | XMC1302, mounted on the board | EVALM11302TOBO1 | SP001591894 |
| Eval-M1-1302_05-65D | Eval-M1-1302, Eval-M1-05-65D, USB cable, 3-pole & 5-pole connector | EVALM113020565DTOBO1 | SP001591902 |
| Eval-M1-1302_05-84D | Eval-M1-1302, Eval-M1-05-84D, USB cable, 3-pole & 5-pole connector | EVALM113020584DTOBO1 | SP001591814 |
| Eval-M1-1302_36-45A | Eval-M1-1302, Eval-M1-36-45A, USB cable | EVALM113023645ATOBO1 | SP001592034 |
| Eval-M1-1302_36-84A | Eval-M1-1302, Eval-M1-36-84A, USB cable | EVALM113023684ATOBO1 | SP001592044 |

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