

# BLDC Drive

Low cost High Performance Motor Control Demo Kit with Infineon's 8-bit Microcontrollers



Infineon Technologies offers an extensive Microcontroller portfolio for Motor Drive Systems - from 8-bit and 16-bit CPUs with comprehensive features to 32-bit TriCore™ with highly integrated peripherals which are capable to control any Motor Drive System. With the correct selection in the Microcontroller for your motor drive solution, your design can achieve that demanding high performance at optimized cost.

This motor control demo kit is designed to guide you into creating your own Hall Sensor BLDC motor control. Additionally, there are source codes and schematics available in the attached CD to guide you into transforming this Hall Sensor control into Sensorless BLDC control. These components may also be used independently for your further evaluation on other features available on the XC866 microcontroller.

## Typical Applications using BLDC Motor

- Electric Wheelchair
- Electronic Bike (eBike)
- Washing Machine Belt
- Air-Conditioner / Refrigerator Compressor
- Fan Motor
- Fitness Machines
- Electronic Power Tool

Order Nr.: B158-H8924-X-X-7600

## Infineon Components

- **SAK-XC866-4FR Pb Free**  
(8-bit Microcontroller)
- **SPB80No8S2L-07**  
(OptiMOS® Power Transistor)

## Hardware Resources

- **XC866 Starter Kit Board**  
(Innovator Kit for XC800 Family)
- **Motor Driver Board**  
(MDB\_LV45G\_v1.1)
- **BLDC Motor**  
(BL3056-18-G28)
- **Motor Driver Board Power Supply**  
(Meanwell S-50-24)\*
  - Input Rating : AC 100~240V, 0.3A, 50/60Hz
  - Output Rating: DC 24V, 2.1A
- **XC866 Starter Kit Power Supply**
  - Output Rating: 5~12V, min 100mA
- **RS 232 Serial Cable**
- **Infineon Motor Control CD**

## Software (Motor Control CD)

- **Autocode Generator**
  - Infineon DAVE
- **Compiler / Debugger**
  - KEIL µVISION 3 (EVALUATION VERSION)
- **Programmer / Flash Tool**
  - Infineon MemTool

\* Motor Driver Board Power Supply input specifications might differ due to regional power requirements and may not be included in the motor control demo kit.

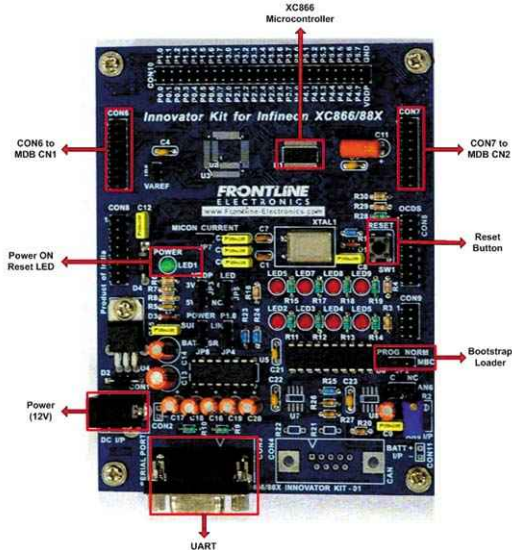
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# Microcontrollers



Never stop thinking

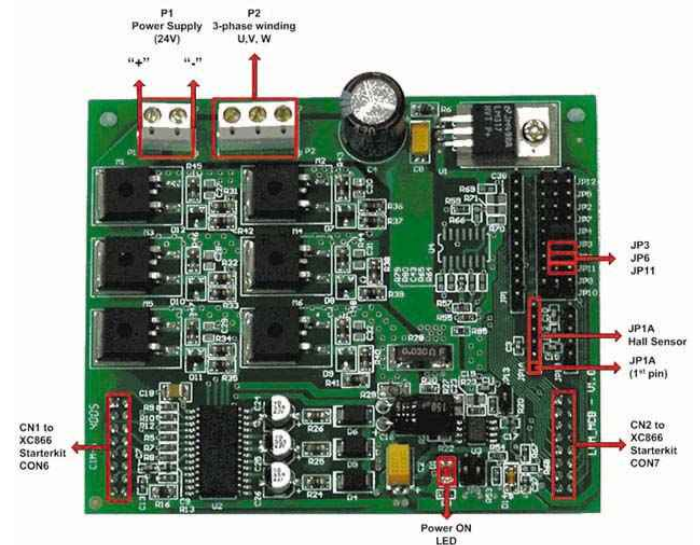
## XC866 Starter Kit



### Key Features

- **MCU Derivative:** SAK-XC866-4FR Pb Free
- **CPU Clock:** 26.67 MHz
- **On-Chip Memory:** 768 Byte RAM, 16 kByte Flash
- **Interfaces:**
  - RS232 via SUBD9 (female)
  - JTAG via header
  - Standard motor control connector via header

## Low Voltage Motor Driver Board



### Key Features

- **DC input power supply:** 20V ~ 45V, 0A ~ 16A
- **Motor Types:** Drives 3-phase motor (BLDC, PMSM, and Induction Motor)
- **Able to measure drive sum current**
- **Interfaces:**
  - Hall sensors, resolver, tachometer, encoder signals
  - Back-emf measurement in sensorless BLDC control
  - Standard XC866 or XC164 starter kit boards connector via header

## New 8-bit XC800 Microcontroller Derivatives suitable for BLDC Drive

	Type	eFlash [KBytes]	RAM [Bytes]	LIN BSL Support	Temperature Range	Package
NEW	SAF-XC866-1FR	4	768	-	-40°C to +85°C	PG-TSSOP-38
NEW	SAK-XC866-1FR	4	768	-	-40°C to +125°C	PG-TSSOP-38
NEW	SAF-XC866L-1FR	4	768	✓	-40°C to +85°C	PG-TSSOP-38
NEW	SAK-XC866L-1FR	4	768	✓	-40°C to +125°C	PG-TSSOP-38
	SAF-XC866-2FR	8	768	-	-40°C to +85°C	PG-TSSOP-38
	SAK-XC866-2FR	8	768	-	-40°C to +125°C	PG-TSSOP-38
	SAF-XC866L-2FR	8	768	✓	-40°C to +85°C	PG-TSSOP-38
	SAK-XC866L-2FR	8	768	✓	-40°C to +125°C	PG-TSSOP-38
	SAF-XC866-4FR	16	768	-	-40°C to +85°C	PG-TSSOP-38
	SAK-XC866-4FR	16	768	-	-40°C to +125°C	PG-TSSOP-38
	SAF-XC866L-4FR	16	768	✓	-40°C to +85°C	PG-TSSOP-38
	SAK-XC866L-4FR	16	768	✓	-40°C to +125°C	PG-TSSOP-38

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### Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office.

### Warnings

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