Application brief

Infineon’s full system solutions for multicopters

Infineon brings ready-to-use multicopter solutions to a high-potential emerging market. By providing an excellent experience and offering cost effective and complete system solutions, Infineon is consequently working on meeting the requirements of the end user such as lighter weight, longer flying time, safety, reliability, etc.

In Infineon’s comprehensive portfolio of high quality products customers can find the widest spectrum of multicopter components on the market. With XMC-controllers, iMOTION™ motor control, magnetic sensors, and many more of Infineon’s cutting-edge technologies, customers achieve a higher degree of innovation and differentiation.

Key enabling products

› Low voltage power MOSFETs – OptiMOS™ and StrongIRFET™
› High voltage power MOSFETs – CoolMOS™
› Dual n-channel MOSFETs
› Gate driver ICs
› Microcontrollers – XMC™

To shorten customer development cycle time and cost we offer a wide range of application kits:

<table>
<thead>
<tr>
<th>Microcontrollers</th>
<th>XMC1000 motor control application kit</th>
<th>XMC4000 motor control application kit</th>
<th>iMOTION™ modular application design kit (EVAL-M1-099M)</th>
<th>24 GHz radar sensor</th>
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<td>DEMO DISTANCE2GO</td>
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<th>DPS310 Pressure sensor</th>
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<tr>
<td>Infineon sensor hub nano EVAL SHNBV01 Sensor hub nano</td>
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Key benefits

› Authentication with OPTIGA™ onboard
› Accuracy & easy control through the benefits of multifunction sensors
› Closed loop control of gimbal motor and sensors
› High resolution pressure sensor for altitude stabilization
› Collision avoidance through 24 GHz radar sensor
› One-stop-shop portfolio
› Increased lifetime due to Infineon’s reliability and quality
› Fast time-to-market due to complete eco-system: simulations, documentation and demoboard solutions

Further information

› www.infineon.com/multicopter
› www.infineon.com/mosfet
› www.infineon.com/xmc
› www.infineon.com/gdfinder
› www.infineon.com/imotion
› www.infineon.com/optiga
› www.infineon.com/sensors
› www.infineon.com/24GHz

www.infineon.com
Multicopter block diagram

**Power management**

- **Authentication**
  - Optimus® Trust B SL95250
- **Cell balancing**
  - Optimus® S in SS08, S308, DirectFET™
  - StrongFET™ 30 V
- **Low voltage MOSFETs**
  - Optimus® S in SS08, S308, DirectFET™
  - StrongFET™ 40 V-80 V

**Power management**

- **DC-DC module**
  - IXF9121EUV50
  - IXF1041EJX33
- **LDO**
  - IXF9117ME
  - IXF4441JE/JV
  - IXF1763KXJ33

**Power management**

- **High voltage MOSFETs**
  - 600 V-650 V CoolMOS™ CE
  - 600 V CoolMOS™ P7 (standard grade)
- **Low voltage MOSFETs**
  - TiO2, SuperS08
  - StrongFET™ 40 V-75 V
- **Stand-alone PWM controller**
  - ICE2QS53G

**Flight controls**

- **Microcontroller**
  - XMC4000 family
  - XMC1000 family
- **Sensors**
  - Pressure sensor
  - 24 GHz radar sensor
  - Current sensor
- **Low noise amplifier (LNA)**
  - LTE: BG437H, BG437M, BG4371
  - Wi-Fi: BFR4830, BFR4840, BFR4850, BFR4860, BFR4870, etc.
- **Security**
  - OptiMOS™ Trust P SL5J52ACA
  - OptiMOS™ TIPM SBL96XX
- **Accessory authentication**
  - OptiMOS™ Trust P SL5J52ACA
  - OptiMOS™ Trust T P SL5J52ACA
- **Joystick**
  - SD magnetic sensor: TL4970
- **Interface protection diodes**
  - ES101 series
- **LED driver**
  - BCR41G
  - BCR321U
  - BCR421U

**Electronic speed control**

- **ESC**
  - Microcontroller
  - XMC4000 family
  - XMC1300 family
  - AURIX™
- **Sensors**
  - Hall sensor: TL44961, TL44962
  - Angle sensor: TL45012B, TL45013B
- **Intelligent module**
  - MOSFET gate driver
  - IRF3201S
  - IRF3205
  - BSC0925ND, etc.
- **Low voltage MOSFETs**
  - Optimus® S series
  - StrongFET™ series

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We reserve the right to change this document and/or the information given herein at any time.

Additional information:

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

**Warnings**

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

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