

Application brief

Infineon's full system solutions for multicopters

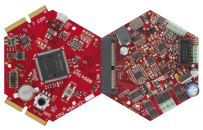
Infineon brings ready-to-use multicopter solutions to a high-potential emerging market. By providing an excellent experience and offering cost effective and complete system solutions, Infineon is consequently working on meeting the requirements of the end user such as lighter weight, longer flying time,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

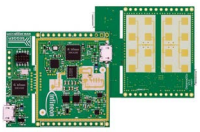
In Infineon's comprehensive portfolio of high quality products customers can find the widest spectrum of multicopter components on the market. With XMC-controllers, iMOTION™ motor control, magnetic sensors, and many more of Infineon's cutting-edge technologies, customers achieve a higher degree of innovation 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™
- iMOTION™ IRMCK099 motor control IC
- Magnetic sensors and voltage regulators
- Pressure sensor and 24 GHz radar sensor
- OPTIGA™ embedded security solutions and authentication

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

Microcontrollers		
XMC1000 motor control application kit	XMC4000 motor control application kit	iMOTION™ modular application design kit (EVAL-M1-099M)
		

24 GHz radar sensor
DEMO DISTANCE2GO


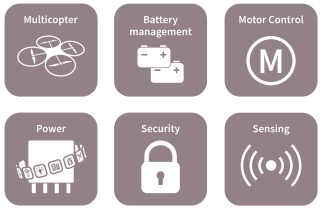
DPS310 Pressure sensor			
Infineon sensor hub nano EVAL SHNBV01 Sensor hub nano	Infineon wireless sensor hub 2.0 KIT DPS310 2G SHV02	Schuttle boards EVAL SHSBV01-I2C and EVAL SHSBV01-SPI	S2GO PRESSURE DPS310
			

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



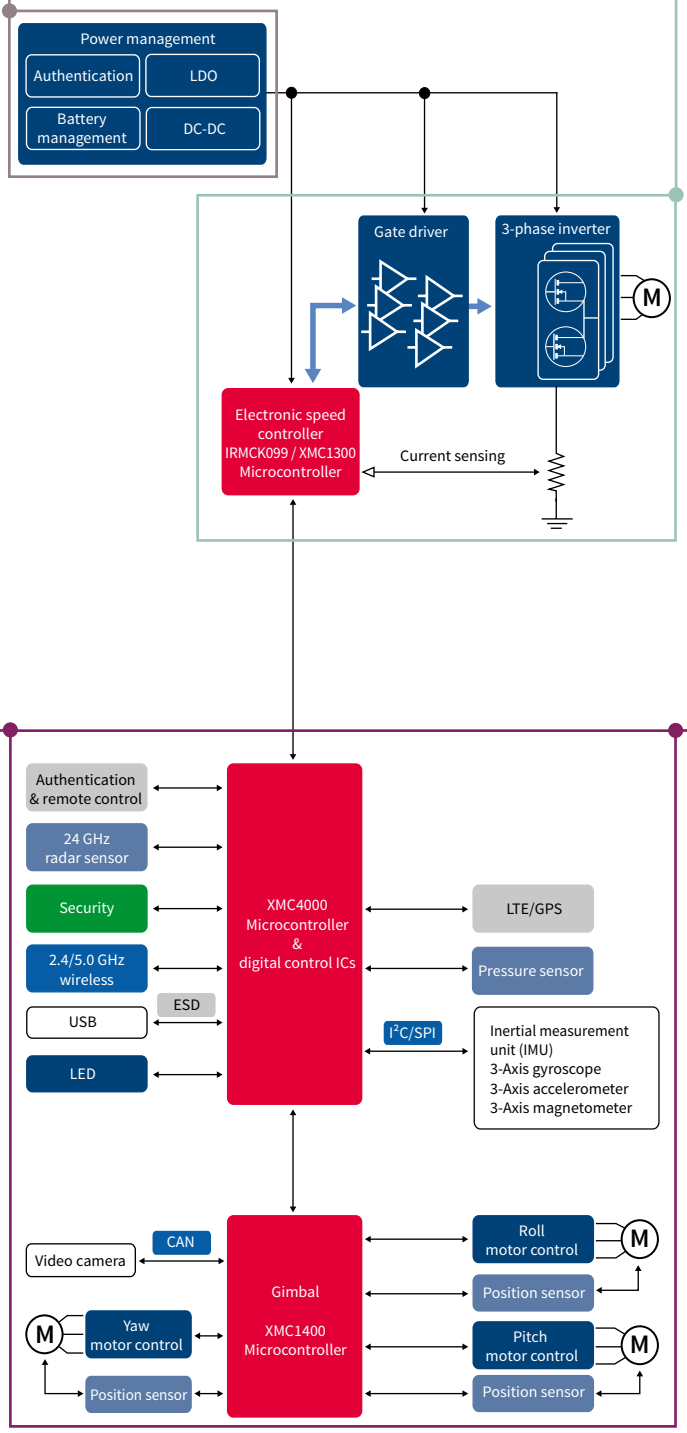
Power management

Battery management	
Authentication IC	OPTIGA™ Trust B SLE95250
Cell balancing	OptiMOS™ 30 V in SSO8, S3O8, DirectFET™
	StrongIRFET™ 30 V
Low voltage MOSFETs	OptiMOS™ 5 in SSO8, S3O8, DirectFET™
	StrongIRFET™ 40 V-80 V

Power management	
DC-DC module	IFX90121ELV50
	IFX91041EJV33
	IFX91041EJV50
LDO	IFX1117ME
	IFX54441EJV
	IFX1763XEJV33

Battery charger	
High voltage MOSFETs	600 V-650 V CoolMOS™ CE
	600 V CoolMOS™ P7 (standard grade)
Low voltage MOSFETs	OptiMOS™ 5 40 V-80 V in TO-220, SuperSO8
	StrongIRFET™ 40 V-75 V
Stand alone PWM controller	ICE2QS03G

Multicopter block diagram



Electronic speed control

	ESC
Microcontroller	XMC1300 family
	iMOTION™ IRMCK099
Sensors	Hall sensor: TLI4961, TLV4961
	Angle sensor: TLI5012B, TLE5009
Intelligent power module	IRSM005-800MH
	IRSM836-084MA
MOSFET gate driver	IRS2301S
	6EDL04N02P
	IRS23365
	PX3517
Dual n-channel power MOSFET	IR3742, etc.
	BSC0925ND, etc.
Low voltage MOSFETs	OptiMOS™ 5 series
	StrongIRFET™ series

Flight controls

Flight control	
Microcontroller	XMC4000 family
	XMC1000 family
	AURIX™
Sensors	Pressure sensor DPS310
	24 GHz radar sensor: BGT24MR2, BGT24MTR11 / BGT24MTR12 / BGT24LTR11
	Current sensor: TLI4970
Low noise amplifier (LNA)	LTE: BGA7H, BGA7M, BGA7L
	GPS: BGA524N6, BGA824N6
	Wi-Fi: BFP842ESD, BFR840L-3RHESD, BFR843L3, etc.
Security	OPTIGA™ Trust E SLS32AIA
	OPTIGA™ Trust P SLJ52ACA
	OPTIGA™ TPM SLB96XX
Accessory authentication	OPTIGA™ Trust SLS10ERE
	OPTIGA™ Trust B SLE95250
Joystick	3D magnetic sensor: TLV493D
Interface protection diodes	ESD102 series
LED driver	BCR450
	BCR321U
	BCR421U

Sensors and peripherals

Gimbal control	
Microcontroller	XMC1400 family
Angle sensor	TLI5012B
	TLE5009
LDO	IFX1117ME
	IFX54441EJV
	IFX1763XEJV33
CAN transceiver	HS CAN IFX1050G
	IFX1050GVIO
Low voltage MOSFETs	OptiMOS™ 5 25 V-30 V
	StrongIRFET™ 20 V-30 V
Dual n-channel power MOSFET	IRFHM8363TRPBF, etc.
MOSFET gate driver	IR2101STRPBF, etc.

Legend
- Power
- Microcontroller
- Security
- Other products
- Sensor
- Peripherals

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