



# New Product Introduction



November 2022

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## Flash+RAM MCP Gen 2

Flash+RAM MCP Gen 2 combines SEMPER™ NOR Flash and HYPERRAM™ 2.0 in a single package for a high-performance, low pin count solution. Gen 2 improves on HYPERBUS™ MCP (the prior generation) with increased performance, reliability, and the addition of an Octal interface option. This MCP combination is ideal for applications requiring boot code storage and expansion RAM.



### Features

- > Flash and RAM in a single package
- > Standard 24 - ball, 8 x 8mm BGA package
- > 400 MBps bandwidth
- > Support for Octal (xSPI Profile 1) and HYPERBUS™ (xSPI Profile 2) interfaces
- > Density: 512 Mb Flash and 64 Mb RAM

### Competitive advantage

- > Support for both profiles of JEDEC xSPI Standard interfaces (Octal and HYPERBUS™)
- > High Performance up to 400 MBps read BW
- > High reliability flash: up to 25 years of retention or 1+ million program / erase cycles
- > Universal pinout provides backward and forward compatibility with previous HYPERBUS™ MCP; discrete Flash and HYPERRAM™
- > Long term availability

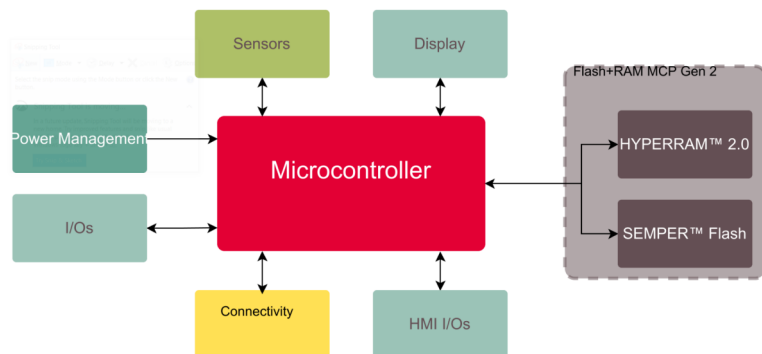
### Benefits

- > MCP combination reduces overall pin count, space requirements, PCB layers, and BOM cost
- > 13-pin serial interface vs 31+ pin DDR SDRAM
- > Smaller PCB with fewer layers
- > Standardized serial interface (xSPI) for Flash and RAM
- > SEMPER™ Flash provides highest reliability (up to 25 years of retention or 1+ million program / erase cycles) and highest performance (up to 400 MBps)
- > HYPERRAM™ provides high performance with low power

### Target applications

- > Automotive Cluster
- > Industrial HMI

### Block diagram



### Product collaterals / Online support

[Product family page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">S76HL512TC0BHB000</a>	SP005728095	PG-BGA-24
<a href="#">S76HL512TC0BHB003</a>	SP005728098	PG-BGA-24
<a href="#">S76HS512TC0BHB010</a>	SP005728091	PG-BGA-24
<a href="#">S76HS512TC0BHB013</a>	SP005728093	PG-BGA-24
<a href="#">S78HL512TC0BHB000</a>	SP005728087	PG-BGA-24
<a href="#">S78HL512TC0BHB003</a>	SP005728089	PG-BGA-24
<a href="#">S78HS512TC0BHB010</a>	SP005723162	PG-BGA-24
<a href="#">S78HS512TC0BHB013</a>	SP005723164	PG-BGA-24

## PSoC™ 4100S Max Microcontrollers

The PSoC™ 4100S Max expands the scalable PSoC™ 4 microcontroller portfolio and delivers more flash, more GPIOs and introduces next generation CAPSENSE™ technology, the 5<sup>th</sup> Generation CAPSENSE™. These advancements enable higher performance, lower power and reduce development costs for HMI based applications. Combined with extensive peripherals and a cryptographic accelerator, the PSoC™ 4100S Max microcontroller innovates your product to the next level.



The PSoC™ 4100S Max also expands the Flash memory of PSoC™ 4 families to 384 KB, which helps address the growing market demand on higher flash density. The PSoC™ 4100S Max will keep the pin compatibility with existing PSoC™ 4100S (Plus) devices.

### Features

- > Arm® Cortex®-M0+, up to 48 MHz with up to 384 KB Flash and 32 KB SRAM
- > Next-generation CAPSENSE™
- > Cryptographic accelerators (AES / SHA / CRC / TRNG / PRNG)
- > 8-Timer / Counter / PWM blocks, 12-bit 1-Msps SAR ADC, 2 OpAMPs and 2 low - power comparators
- > 5 serial configuration blocks (SCBs), I2S interfaces, CAN - FD controller and LCD controller
- > 100 / 64 / 48 - pin TQFP with up to 84 GPIOs, including 24 smart I/Os

### Benefits

- > An affordable single-chip solution with 80+ CAPSENSE™ I/Os to easily design HMI and control systems with a low cost BOM
- > New multi-sensing converter (MSC) technology provides best - in - class signal-to-noise ratio (SNR) ( > 5:1 ) and strengthens the leadership of CAPSENSE™ technology in HMI based applications
- > Reduce external components with rich peripherals and implement security functions with the cryptographic engine
- > Easy-to-use ModusToolbox™ software environment enables fast firmware development

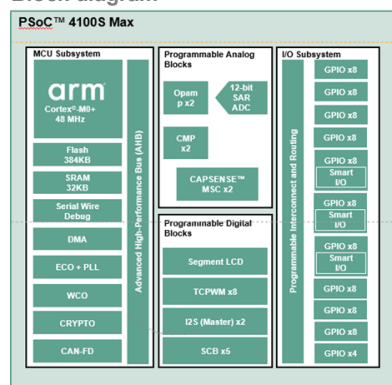
### Competitive advantage

- > Next generation CAPSENSE™ technology, with new Multi - sensing converter (MSC) technology, and industry leading signal - to - noise ratio (SNR)
- > Delivers higher performance with lower power, more security, more Flash, and more GPIOs, enabling a single - chip solution
- > Scalable PSoC™ 4 architecture and pin - compatibility
- > Supports ModusToolbox™ software environment with GUI - based configuration tools

### Target applications

- > Industrial Control: Robotics, PLC's, Industrial HMI, Inductive Sensors
- > Large Home Appliances: Washing Machines, Refrigerators, Air Conditioners
- > Home Automation: Smart Thermostats, Robots, Printers

### Block diagram



### Product collaterals / Online support

[Product page](#)

[Board page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">CY8C4149AZI-S593</a>	SP005646513	PG-TQFP-48
<a href="#">CY8C4149AZI-S595</a>	SP005646517	PG-TQFP-64
<a href="#">CY8C4149AZI-S598</a>	SP005646521	PG-TQFP-100
<a href="#">CY8CKIT-041S-MAX</a>	SP005716920	

## Automotive PSoC™ 4700S Plus

Automotive PSoC™ 4 MCU is a scalable and reconfigurable platform architecture for a family of programmable embedded system controllers with an Arm® Cortex®-M0+ CPU while being AEC-Q100 compliant. It combines programmable and reconfigurable analog and digital blocks with flexible automatic routing. The PSoC™ 4700S Plus product family, based on this platform, is the industry's first microcontroller with inductive sensing and capacitive sensing technology in a single chip. The inductive sensing technology enables sensing of metal objects and industry's leading capacitive sensing (CAPSENSE™) technology enables sensing of non-metallic objects.



### Features

- > 48 MHz Arm® Cortex®-M0+ CPU
- > Up to 128 KB of flash with Read Accelerator and up to 8 KB of SRAM
- > 8-channel DMA engine
- > Programmable analog blocks and LCD drive capability
- > Inductive sensing and capacitive sensing
- > Five independent run-time reconfigurable serial communication blocks (SCBs) with re-configurable I2C, SPI, UART functionality, or LIN slave functionality

### Target applications

- > Infotainment / HVAC systems
- > Interior HMI
- > Automotive exterior HMI
- > Steering Wheel HMI
- > Liquid Level Sensing
- > Passenger occupant and hands-on-detection

### Benefits

- > Scalable and reconfigurable platform architecture for a family of programmable embedded system controllers with an Arm® Cortex®-M0+ CPU
- > AEC-Q100 compliant

### Product collaterals / Online support

[Product family page](#)

[Product page CY8C4746LQS-S263](#)

[Product page CY8C4747LQS-S453](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">CY8C4746LQS-S263</a>	SP005650575	PG-VQFN-40
<a href="#">CY8C4747LQS-S453</a>	SP005650577	PG-VQFN-40

## TRAVEO™ T2G CYT2BL Series

Thanks to its special features the TRAVEO™ T2G family is the perfect match for connected-car. The CYT2BL series MCUs are designed for automotive body electronics with processing power and network connectivity built into the Arm® Cortex®-M4F. These devices are suitable for automotive body applications such as body control modules, HVAC, and lighting.



### Features

- > HSM (Hardware security module)
- > eSHE (Enhanced Secure Hardware Extension)
- > Cortex®-M0+ for secure processing
- > Embedded flash in dual bank mode for FOTA requirements
- > Memory Protection Unit (MPU)

### Benefits

- > Configurable HSM domains
- > Scalability to 4MB Flash and Cortex-M4F single core
- > Read While Write dual bank operations
- > Low standby current with quick resume operation

### Target applications

- > Body application
- > Infotainment
- > HVAC
- > Lighting

### Competitive advantage

- > Advantage on low power mode which fits perfectly to body applications for power consumption, security and safety solutions

### Product collaterals / Online support

[Product family page](#)

[Product page CYT2BL8CAAQ0AZEGS](#)

[Product page CYT2BL8CAAQ0AZEGS](#)

### Product overview incl. data sheet link

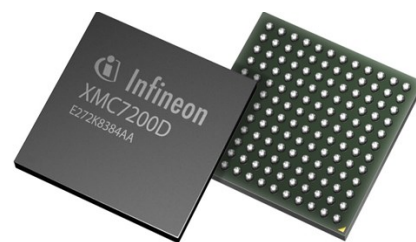
OPN	SP Number	Package
<a href="#">CYT2BL5CAAQ0AZEGS</a>	SP005734424	PG-LQFP-100
<a href="#">CYT2BL8CAAQ0AZEGS</a>	SP005734400	PG-LQFP-176

## XMC7000 Industrial Microcontroller

The XMC7000 industrial microcontroller portfolio is built on a 40-nm process technology, and offers single and dual Arm® Cortex®-M7 cores running at 350MHz, supported by a Cortex®-M0+.

With a comprehensive set of advanced peripherals, competitive set of security features, temperature range of -40 to 125°C, and low-power modes down to 8µA, the XMC7000 is a fit for industrial applications. The XMC7000 is equipped with peripherals such as CAN-FD, TCPWM and Gb Ethernet, which increase flexibility and offer added value. The XMC7200 integrates Gigabit Ethernet, providing real-time ethernet communications and reliable connectivity for always on applications.

The XMC7000 comes in four package and pin combinations with 17 part number variants to meet flexible design requirements. The XMC7000 family is ideal for motor control, digital power conversion and I/O applications.



### Features

- > Single / Dual Arm® Cortex®-M7 running up to 350 MHz and single-core Arm® Cortex®-M0+ up to 100 MHz
- > Up to 8 MB flash and up to 1K SRAM
- > Advanced peripherals including CAN-FD, Gigabit Ethernet, ADCs and TCPWM timers
- > Cryptography engine supporting AES, 3DES, SHA-1/2/3, RSA, ECC, CRC, TRNG
- > Low - power modes down to 8 µA
- > TQFP and LFBGA packages, scaling from 100 to 272 pins, with temperature range from -40° C to 125° C

### Target applications

- > Industrial drives & robotics
  - > General purpose drives (GPD), servo drives, medium voltage drives (MVD), sensor node, service robot, industrial robot
- > EV-charging
  - > AC or DC charging, wallbox, charging cable, fast charging station, inductive chargers, power supply
- > Electric two-wheeler
  - > Battery management system
- > Programmable logic control (PLC), I/O modules

### Benefits

- > Best - in - class performance, with multicore and real - time control to meet the most demanding industrial applications
- > Advanced TCPWM for sophisticated motor control
- > Extended temperature range for operation in harsh environments
- > Lower - power modes enable power critical applications
- > Different combinations of core, memory and package for flexi-

### Competitive advantage

- > The performance covers most industrial applications use cases, with its ability for task distribution
- > Optimal solution for motor control and power conversion, by leveraging the real time control, peripherals, and cryptographic engine
- > One of its main advantages is the low power mode, down to 8 µA
- > Availability of 17 different part numbers, with extended temperature grade, 4 footprint versions and multiple core / memory / package combinations

### Product collaterals / Online support

[Product page](#)

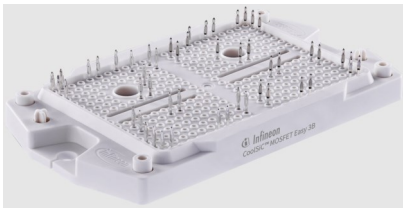
[Board page](#)

### Product overview incl. data sheet / user manual link

OPN	SP Number	Package
<a href="#">XMC7200D-F176K8384AA</a>	SP005855823	PG-TQFP-176
<a href="#">XMC7200D-E272K8384AA</a>	SP005855829	PG-LFBGA-272
<a href="#">XMC7100D-F100K4160AA</a>	SP005855771	PG-TQFP-100
<a href="#">XMC7100D-F144K4160AA</a>	SP005855787	PG-TQFP-144
<a href="#">XMC7100D-F176K4160AA</a>	SP005855807	PG-TQFP-176
<a href="#">XMC7100-F100K4160AA</a>	SP005855761	PG-TQFP-100
<a href="#">XMC7100-F144K4160AA</a>	SP005855781	PG-TQFP-144
<a href="#">KITXMC72EVKTOBO1</a>	SP005738295	

EasyPACK™ 3B CoolSiC™ MOSFET 2000 V lead type  
DF4-19MR20W3M1HF\_B11

The DF4-19MR20W3M1HF\_B11 is the first 2000 V CoolSiC™ MOSFET power module in an EasyPACK™ 3B housing. It enables a simpler solution, fewer number of components while increasing the power density and reducing the total system-cost for 1500 V<sub>DC</sub> applications.



The DF4-19MR20W3M1HF\_B11 features a 4-leg boost configuration in one Easy 3B housing and comes with the latest CoolSiC™ M1H generation. The 2000 V SiC MOSFET shares the same performance and benefits as the 1200 V M1H series incl. 12% lower R<sub>DSon</sub> at 125° C, wider gate source voltage area for higher flexibility, a max. junction temperature of T<sub>vjop</sub> 175° C and smaller chip sizes.

Features

- > 2000 V CoolSiC™ MOSFET with enhanced generation 1
- > Easy 3B housing
- > Four channel boost configuration
- > Enlarged recommended gate drive voltage window from +15...+18 V and 0...-5 V
- > Extended maximum gate - source voltages of +23 V and -10 V
- > T<sub>vjop</sub> under overload condition up to 175° C
- > PressFIT pins

Benefits

- > Increasing power with half the part count
- > The latest CoolSiC™ technology gives you full freedom in choosing the gate voltage during turn - off
- > 10 x lower FT rate compared to 1700 V due to reduction of cosmic ray induced failure rate
- > Reduction of drift caused by dynamic components

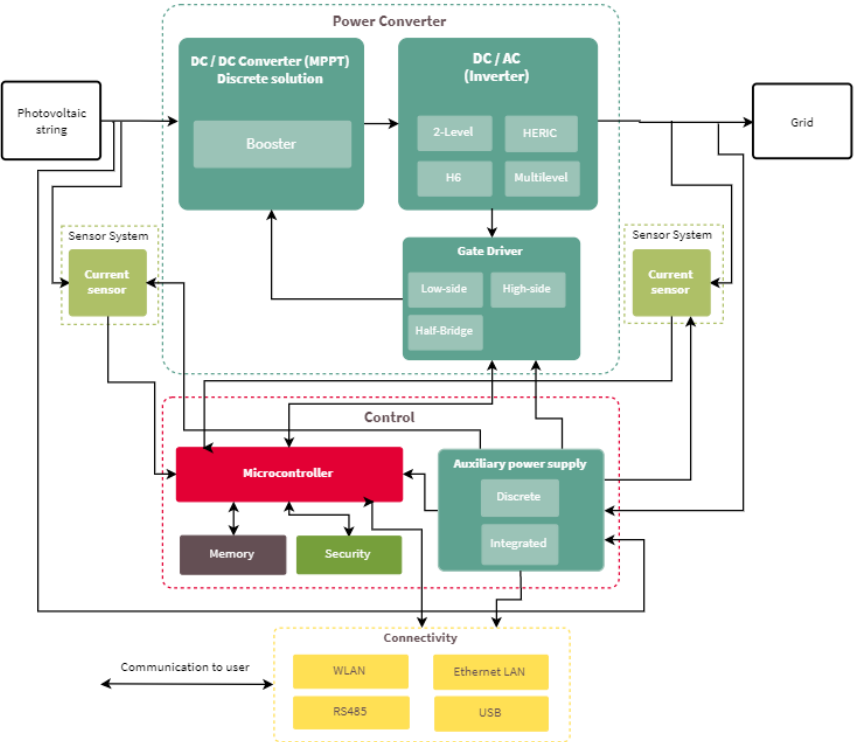
Competitive advantage

- > Industry - first 2000 V SiC MOSFET

Target applications

- > Solar booster

Block diagram



Product collaterals / Online support

[Product page](#)

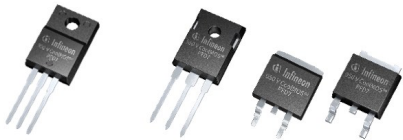
Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">DF419MR20W3M1HFB11BPSA1</a>	SP005677961	AG-EASY3B-3111



# 950 V CoolMOS™ PFD7

The 950 V CoolMOS™ PFD7 family is a revolutionary superjunction technology for high-voltage power MOSFETs, with integrated fast body diode to address lighting and industrial SMPS. The new series is tailored for usage across several topologies.



### Features

- > Integrated ultra-fast body diode with BiC  $Q_{rr}$  (reverse recovery charge)
- > Best-in-class FOM  $R_{DS(on)} \times E_{oss}$ ; reduced  $Q_g$ ,  $C_{iss}$  and  $C_{oss}$
- > Best-in-class  $R_{DS(on)}$  in various packages like 450 mΩ in DPAK or 60 mΩ in TO-247
- > Best-in-class  $V_{(GS)th}$  of 3 V and smallest  $V_{(GS)th}$  variation of  $\pm 0.5$  V
- > ESD protection up to class 2 (HBM)
- > Best-in-class quality and reliability

### Target applications

- > Lighting
- > Consumer and Industrial SMPS

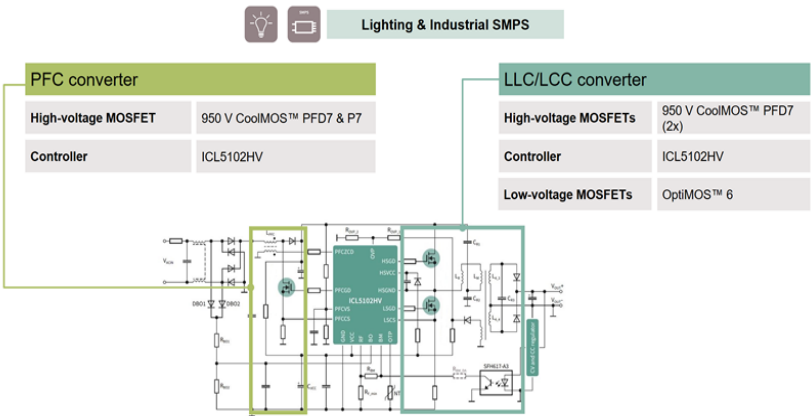
### Benefits

- > Best-in-class hard commutation ruggedness enabling usage across topologies
- > Up to 0.5 % efficiency gain and up to 4° C lower MOSFET temperature compared to CoolMOS™ C3
- > Enabling higher power density designs, BOM savings and lower assembly cost
- > Easy to drive and to design-in
- > Improved production yield by reducing ESD related failures
- > Less production issues and reduced field returns

### Competitive advantage

- > BiC reverse recovery charge ( $Q_{rr}$ ) and reverse recovery time ( $t_{rr}$ ), out-performs its main competitor
- > BiC and the lowest  $V_{(GS)th}$  tolerance
- > Improved by 60%  $Q_g$  compared to CoolMOS™ C3 family
- > ~4° C lower MOSFET temperature compare to closest competitor
- > Better cost performance compared to CoolMOS™ C3 family and closest competitor

### Block diagram



### Product collaterals / Online support

[Product family page](#)

[Application note](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IPA95R130PFD7XKSA1</a>	SP005546999	PG-TO220-3
<a href="#">IPA95R310PFD7XKSA1</a>	SP005547007	PG-TO220-3
<a href="#">IPA95R450PFD7XKSA1</a>	SP005547011	PG-TO220-3
<a href="#">IPD95R450PFD7ATMA1</a>	SP005547015	PG-TO252-3
<a href="#">IPW95R060PFD7XKSA1</a>	SP005547003	PG-TO247-3
<a href="#">IPW95R310PFD7XKSA1</a>	SP005547006	PG-TO247-3
<a href="#">IPB95R450PFD7ATMA1</a>	SP005547014	PG-TO263-3



## NAC1080 - NFC Tag-side controller with integrated NFC connectivity

The NAC1080 is a NFC tag-side controller with integrated NFC connectivity, half-bridge for motor control, security functions and optimized energy harvesting capability. It enables a single-chip solutions to build miniaturized, battery-less, mobile phone controlled smart actuators such as passive locks.



### Features

- >  $\mu$ C with integrated NFC interface
- > Build - in NFC energy harvesting
- > Integrated half-bridge
- > Passive mode or battery mode
- > 128 bit AES accelerator and true random number generator

### Benefits

- > Reduced BOM thanks to a highly integrated single-chip solution
- > Fully flexible software-defined functions
- > Build-in security functions to meet the application requirements

### Target applications

- > Passive NFC lock
- > Emergency power supply for battery powered devices
- > NFC Interface for home appliances

### Competitive advantage

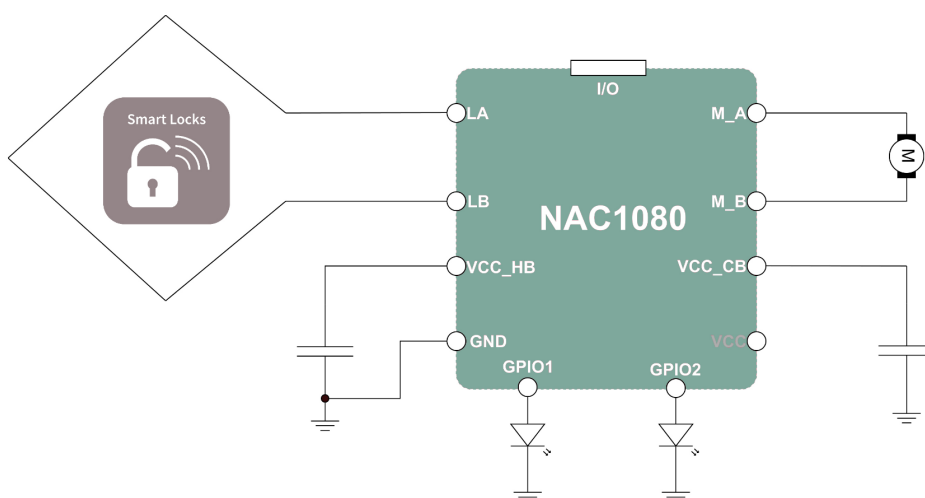
- > Single-chip solution for miniaturized battery-less and mobile phone controlled smart actuators such as passive locks.
- > The NAC1080 can be used as a plug-in to the active lock system providing an emergency power supply function – in case of an empty battery, users can open the lock by still using the mobile phone, but with NFC interface.

### Product collaterals / Online support

[Product page](#)

[Board page](#)

### Block diagram



### Product overview incl. data sheet / user manual link

OPN	SP Number	Package
<a href="#">NAC1080XTMA2</a>	SP005430523	PG-DSO-16
<a href="#">DEVKITNAC1080TOBO1</a>	SP005832833	

EiceDRIVER™ 2EDL8X2XG3C - 120 V, 3 A / 4 A, junction-isolated high-side and low-side Gate Driver ICs

2EDL8x2XG3C are high-side and low-side drivers designed for advanced switching converters such as in telecom and datacom applications. 2EDL802xG3C takes in independent inputs with built-in hysteresis for enhanced noise immunity, whereas 2EDL812xG3C takes in differential input with built-in hysteresis for enhanced noise immunity. 2EDL812x's inherent shoot-through protection ensures the robustness of the system



The driver comes in a 3X3 SON small package with a standard pinout.

Features

- > 120 V boot-strap diode integrated
- > Low resistance rail-to-rail outputs
  - > Low-side: 4 A pull-up and 6 A pull-down
  - > High-side: 4 A pull-up and 5 A pull-down
- > 4 ns delay matching
- > Differential inputs, optional
- > VSON-10 (3 mm x 3mm) package

Benefits

- > No need for an external boot-strap diode
- > Fast MOSFET switching
- > A strong pull-down current reduces the risk of return-on from switching noise
- > Low deadtime losses
- > Inherent shoot-through protection
- > 8 V / +15 V common mode rejection

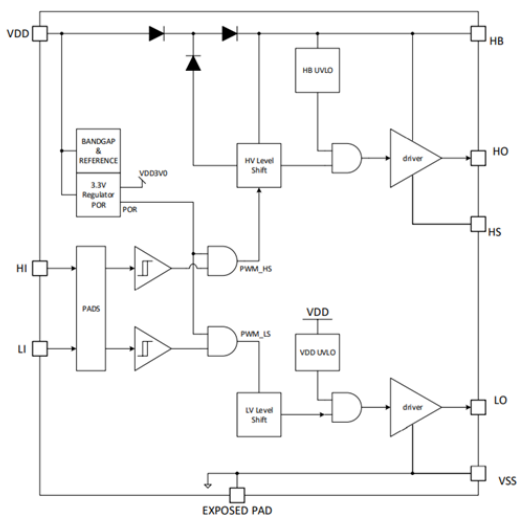
Target applications

- > DC - DC converter
- > Isolated bus converter
- > Synchronous rectification for SMPS
- > Class-D audio amplifiers

Competitive advantage

- > Small package, strong pull-down current

Block diagram



Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">2EDL8023G3CXTMA1</a>	SP005577965	PG-VSON-10
<a href="#">2EDL8024G3CXTMA1</a>	SP005577969	PG-VSON-10
<a href="#">2EDL8123G3CXTMA1</a>	SP005577973	PG-VSON-10
<a href="#">2EDL8124G3CXTMA1</a>	SP005577971	PG-VSON-10

Product collaterals / Online support

- [Product page 2EDL8023G3C](#)
- [Product page 2EDL8024G3C](#)
- [Product page 2EDL8123G3C](#)
- [Product page 2EDL8124G3C](#)

# TLD7002-16ES multi-channel LED Driver for exterior front and rear lighting

TLD7002-16ES is a 16 channel linear current sink (LCS) with integrated and protected output stages. It is designed to control LEDs with a current up to 76.5 mA. The power stages can be configured in parallel for higher load currents. 16 independent and individual PWM configurations can be set. A high-speed lighting interface is used for device OTP programming, configuration, control and diagnostic feedback.



## Features

- > 16 channel driver with integrated and protected output stages to drive LEDs up to 76.5 mA per channel
- > Parallel output operation for higher load currents
- > 16 independent 14-bit PWM engines from 100 Hz to 2 kHz
- > Configurable LED open, short and single-LED-short thresholds as well as thermal derating
- > Integrated HSLI transceiver, CAN-FD physical-layer compatible up to 2 MBit/s
- > Developed according to ISO26262 with process complying to ASIL-B

## Benefits

- > Easy implementation of animation features
- > Future-proof bus driven architecture
- > Easy safety design: developed according to ISO26262 with process complying to ASIL-B
- > Advanced diagnostic

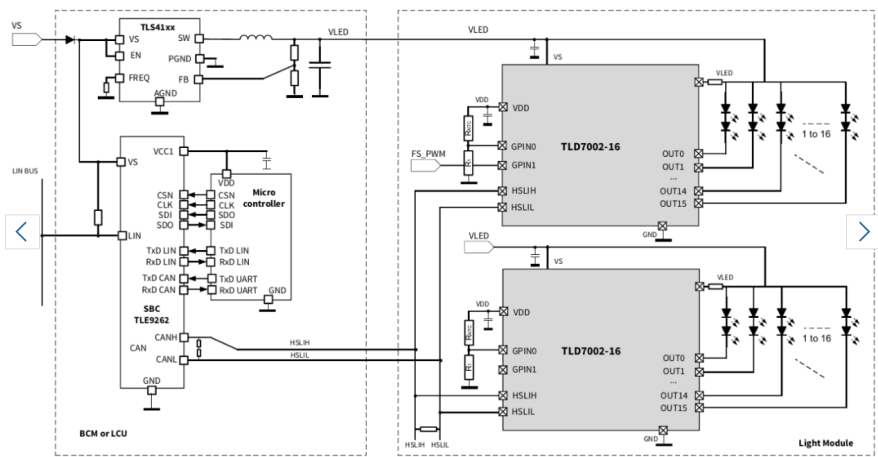
## Target applications

- > Automotive rear lighting functions, e.g. tail, stop and sequential (dynamic) turn indicator
- > Automotive front lighting functions, e.g. wiping indicator, animated grille lamp
- > Animated light functions like “welcome/goodbye” functions
- > Interior lighting functions for ambient lighting (RGB color control), illumination and dash board lighting
- > LED panels for industrial applications and instrumentation

## Competitive advantage

- > ASIL-B compliant
- > Very flexible PWM configurations
- > Fits exterior and interior LED lighting
- > Straight-forward design-in

## Block diagram



## Product collaterals / Online support

[Product page](#)

## Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">TLD700216ESXUMA1</a>	SP004542880	PG-TSDSO-24

## OptiMOS™ power MOSFETs 25 V - 150 V in PQFN 3.3 x 3.3 Source-Down dual-side cooling (DSC)

Infineon introduces its first portfolio extension of the innovative Source-Down technology concept. The new parts in PQFN 3.3 x 3.3 mm Source-Down dual-side cooling are extending the product range starting from 25 V up to 150 V that will be fully released within this year.

The Source-Down technology impresses with a silicon die that is flipped upside down inside of the component, offering a number of advantages on device and system level. Instead of the drain potential being connected to the PCB over the thermal pad, the source potential is connected to it. Source-Down offers a lot of benefits compared with current solutions: improved thermal capability, improvement in power density, optimized layout possibilities.

System level benefits include higher efficiency, less active cooling requirements and a more effective layout for thermal management. The new benchmark  $R_{DS(on)}$  combined with its layout capabilities the Source-Down dual-side cooling concept is a true thermal management champion. This new concept helps to address many pain-points in a variety of end applications such as drives, telecom, SMPS and server can be mentioned.



### Features

- >  $R_{DS(on)}$  reduction up to 30% depending on the voltage class
- > Optimized layout possibilities
- > Superior thermal performance by dual-side cooling
- > Two footprint versions available

### Competitive advantage

- > Best-in-class PQFN 3.3 x 3.3 mm package
- > Lower  $R_{thJC}$
- > Benchmark  $R_{DS(on)}$
- > Overall system PCB space saving
- > Increase power density is the core benefit of the Source-Down package

### Benefits

- > Higher system efficiency
- > System form factor reduction
- > More relaxed thermal management
- > Optimal device arrangement on the PCB

### Target applications

- > Battery management, drives, telecom, SMPS, server

### Product collaterals / Online support

[Product family page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IQE006NE2LM5CGSCATMA1</a>	SP005419125	PG-WHTFN-9
<a href="#">IQE006NE2LM5SCATMA1</a>	SP005419117	PG-WHSON-8
<a href="#">IQE013N04LM6CGSCATMA1</a>	SP005559058	PG-WHTFN-9
<a href="#">IQE013N04LM6SCATMA1</a>	SP005559052	PG-WHSON-8
<a href="#">IQE030N06NM5CGSCATMA1</a>	SP005559068	PG-WHTFN-9
<a href="#">IQE030N06NM5SCATMA1</a>	SP005559064	PG-WHSON-8
<a href="#">IQE050N08NM5CGSCATMA1</a>	SP005559076	PG-WHTFN-9
<a href="#">IQE050N08NM5SCATMA1</a>	SP005559072	PG-WHSON-8
<a href="#">IQE065N10NM5CGSCATMA1</a>	SP005559084	PG-WHTFN-9
<a href="#">IQE065N10NM5SCATMA1</a>	SP005559080	PG-WHSON-8
IQE008N03LM5SCATMA1**	SP005559040	PG-WHSON-8-1
IQE008N03LM5CGSCATMA1**	SP005559046	PG-WHTFN-9-1
IQE220N15NM5SC**	SP005559088	PG-WHSON-8-1
IQE220N15NM5CGSC**	SP005559092	PG-WHTFN-9-1

\*\* coming soon

# StrongIRFET™ 2 power MOSFET 40 V in TO-220 package

The new StrongIRFET™ 2 power MOSFETs in 40 V are Infineon's latest generation of MOSFET technology addressing a wide range of applications such as power and gardening tools, battery protection, energy storage systems, SMPS. They are suitable for both low and high switching frequencies. This new family compliments the well - established StrongIRFET™ MOSFETs by offering a higher performance option.



### Features

- > Broad availability from distribution partners
- > Excellent price/performance ratio
- > Ideal for high and low switching frequency
- > High current rating

### Benefits

- > Increased security of supply
- > Right-fit products
- > Supports a wide variety of applications
- > Increased product ruggedness

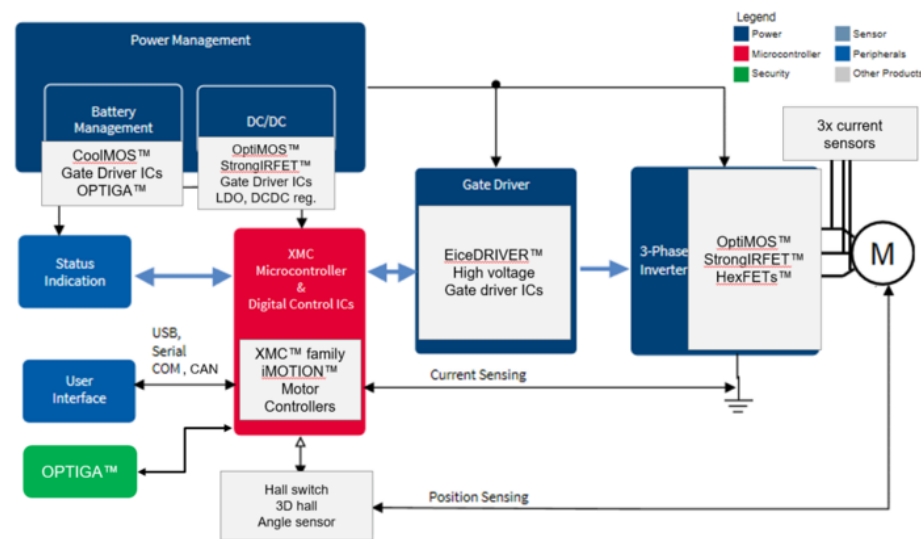
### Competitive advantage

- > Large portfolio of products for a wide range of applications
- > Availability at multiple distribution partners
- > Excellent price/performance ratio

### Target applications

- > Power and gardening tools
- > Motor drives
- > Battery management
- > Energy storage systems

### Block diagram



Product collaterals / Online support

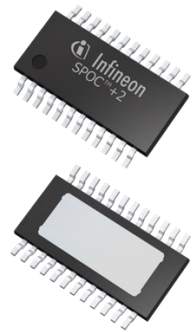
[Product family page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IPP011N04NF2SAKMA1</a>	SP005561927	PG-TO220-3
<a href="#">IPP013N04NF2SAKMA1</a>	SP005633186	PG-TO220-3
<a href="#">IPP015N04NF2SAKMA1</a>	SP005632892	PG-TO220-3
<a href="#">IPP026N04NF2SAKMA1</a>	SP005632915	PG-TO220-3
<a href="#">IPP033N04NF2SAKMA1</a>	SP005550859	PG-TO220-3

SPOC™ +2 Serial Interface Power Controller, product family extension with ESP devices

Extension of the SPOC™ +2 multichannel high-side switch portfolio: same feature set and full family compatibility to existing ESA variants, but with new undervoltage concept / switch-on behavior after undervoltage shutdown. No power supply undervoltage recovery time  $t_{\text{DELAY(UV)}}$  implemented, to address power distribution applications like fuse & relay replacement and power to ECUs / sensors. The SPOC™ +2 family now provides even more partitioning opportunities to address all kind of domain and zonal applications.



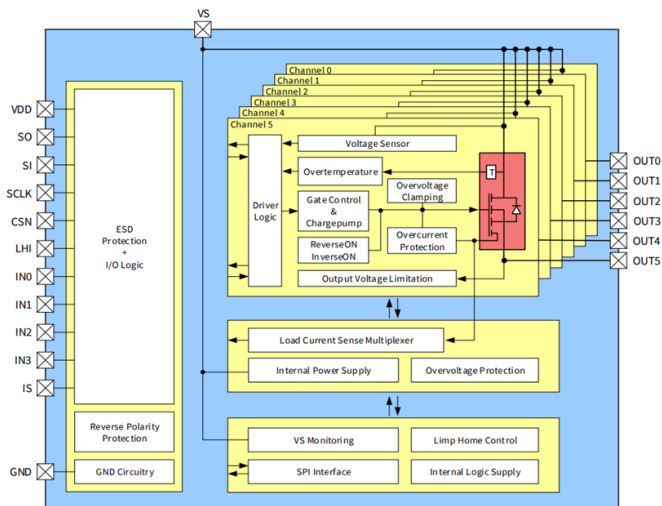
Features

- > High - side switch with daisy - chain capable SPI interface, integrated diagnosis and protection
- > Configurable restart strategy, overcurrent threshold,  $k_{\text{ILIS}}$  range and slew rate control for all channels
- > Open load and short to Vs detection
- > Limp - home Logic mode for fail - safe operation
- > Part of Infineon's ISO 26262-ready portfolio with safety application note
- > Supports the various micro interruption and voltage fluctuation requirements with a new undervoltage concept

Competitive advantage

- > Pin-to-pin compatibility within SMART7 products (PROFET™ family)
- > High reliability and short circuit robustness
- > Competitive pricing due to monolithic 1 metal layer design
- > Multichannel device with SPI daisy-chain capability to minimize the number of required microcontroller I/O

Block diagram



Benefits

- > Scalability: high modularity due to pin, function and software compatibility
- > Performance: configuration of protection, slew rate and diagnosis
- > Flexibility: wide range of  $R_{\text{DS(ON)}}$  and channel parallelization
- > Quality: AEC-Q100 - Grade1. ISO26262 – ready to support functional safety

Target applications

- > Power Distribution
  - > Fuse & Relay Replacement
  - > BCM, PDC
  - > Power to ECUs
- > Lighting
  - > LED, Halogen, HID
  - > Interior & Ambient
  - > BCM (TI, FOG, ...)
  - > Front & Rear Lights
- > ADAS
  - > Radar sensors
  - > Cameras
  - > Ultrasonic sensors
- > Heating
  - > Side Mirror
  - > Sensors
  - > Low power heating applications

Product collaterals / Online support

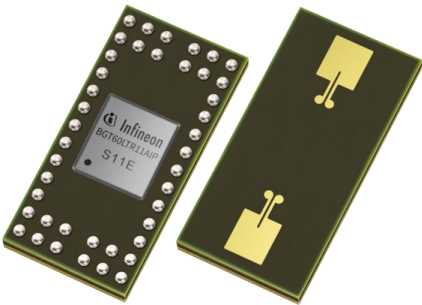
[Product family page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">BTS710336ESPXUMA1</a>	SP005582332	PG-TSDSO-24
<a href="#">BTS710404ESPXUMA1</a>	SP005582330	PG-TSDSO-24
<a href="#">BTS712204ESPXUMA1</a>	SP005582334	PG-TSDSO-24
<a href="#">BTS72204ESPXUMA1</a>	SP005582328	PG-TSDSO-24

XENSIV™ 60GHz radar sensor BGT60LTR11SAIP

This is a down-specified version of our BGT60LTR11AIP radar sensor. Instead of a typical/maximum detection range of 5 / 7 m in autonomous mode, this chip offers 4 / 6 m. The operating temperature range is reduced from -20 to +85 ° C towards -10 to +70 ° C. The BGT60LTR11SAIP MMIC is a fully integrated microwave motion sensor including Antennas in Package (AIP) as well as built-in motion and direction of motion detectors. A state machine enables operation of the device autonomously, i.e., without an external microcontroller or further signal processing. The MMIC has four quad-state input pins that give the performance parameters flexibility, even in this autonomous mode. The detection threshold or sensitivity has 16 different levels in order to fulfill a configurable detection range from 0.5 m up to 6 m with a typical human target Radar Cross Section (RCS). Hold time is also configurable in 16 levels in autonomous mode, which allows detection status to be held from 0.1 s up to 30 minutes. The device can achieve power consumption of less than 2 mW with adjustable duty cycling.



Features

- > 3.3 x 6.7 x 0.56 mm<sup>3</sup> package size
- > 1Tx 1Rx Antennas in Package (AIP) with 90° Half Power Beam Width (HPBW)
- > Integrated motion detector
- > Integrated direction of motion detector
- > Multiple modes of operation including a completely autonomous mode
- > Adjustable performance parameters such as detection sensitivity, hold time and frequency of operation
- > Standard FR4 material can be used for PCB design

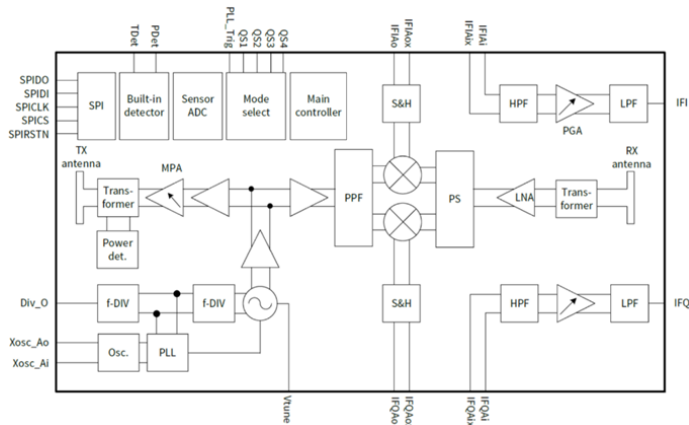
Benefits

- > Eliminates switching loss at low VCC supply voltage
- > Autonomous mode
  - > Up to 6 m detection range for humans
  - > Less than 2 mW power consumption possible
  - > Requires minimal external circuitry
- > SPI mode
  - > Up to 14 m detection range for human targets
  - > Requires microcontroller unit (e.g. Arm® Cortex®-M0)
  - > Advanced functionalities by SPI configuration or further signal processing

Competitive advantage

- > Cheapest and smallest 60 GHz radar sensor with antenna in package on the market

Block diagram



Target applications

- > Smart Building and Smart Home devices such as thermostats, smoke detectors, smart speakers and other entertainment systems
- > Smart appliances (Small home appliances and major home appliances) such as service robots, vacuum cleaners, lawnmower, washing machine and kitchen appliances
- > Smart home security and alarm systems including IP cameras
- > Displays such as TVs, monitors, laptops or tablets
- > Lighting systems and lighting control (mainly indoor lighting)

Product collaterals / Online support

- [Product page](#)
- [Product article](#)

Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">BGT60LTR11SAIPXUMA1</a>	SP005832449	PG-UF2BGA-42
<a href="#">SHIELDAUTONOMBGT60TOBO1</a>	SP005630363	



# XENSIV™ IM73D122V01 ultra-low noise digital MEMS microphone

Ultra-low noise digital XENSIV™ MEMS microphone IM73D122 is designed for applications which require a very high SNR (low self - noise) and a high sensitivity. The flat frequency response (20Hz low - frequency roll - off) and tight manufacturing tolerance improve performance of multi - microphone (array) applications. This microphone is based on Infineon’s new Sealed Dual Membrane MEMS technology which delivers high ingress protection (IP57) at a microphone level.



The powerful mix of ultra - high SNR and high sensitivity empowers high quality audio capturing for voice user interface applications in laptops, tablets or conferencing devices.

### Features

- > Ultra - low self - noise / ultra - high SNR 73 dB(A)
- > Very high sensitivity (-26 dBFS)
- > Sealed Dual Membrane (SDM) technology with IP57 ingress protection at microphone level
- > High dynamic range and acoustic overload point (AOP) of 122 dB SPL
- > Very tight part - to - part phase and sensitivity matching ( $\pm 1$  dB)
- > Flat frequency response with a low LFRO (low frequency roll - off) of 30 Hz
- > Very low group delay (7  $\mu$ s @ 1 kHz)

### Benefits

- > Powerful far - field and low volume audio pick - up
- > Robust ingress protection (IP57) at a microphone level
- > Enablement of advanced audio features (audio zoom, beam-forming)

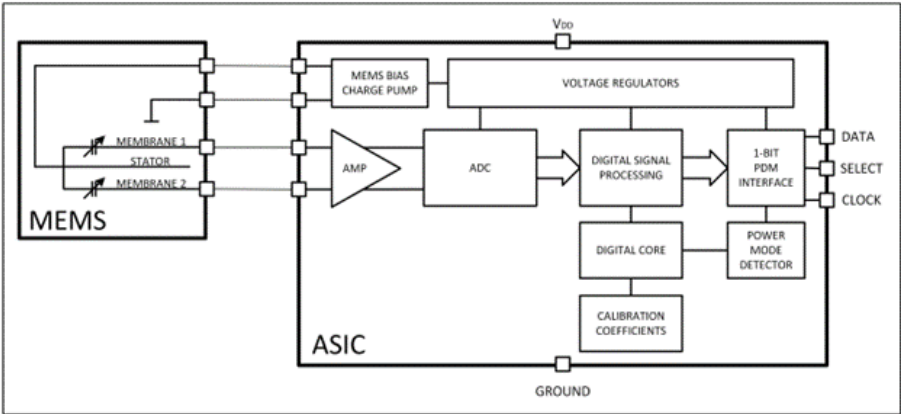
### Competitive advantage

- > Advanced features (see above)
- > Holistic Infineon support (technical collateral, discussion forum community, support of the 1<sup>st</sup> and 2<sup>nd</sup> levels)

### Target applications

- > Laptop & tablets
- > Conference systems
- > Smart speakers
- > Cameras

### Block diagram



Product collaterals / Online support

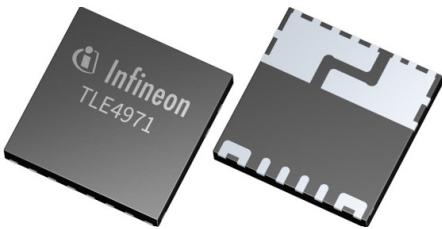
[Product page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IM73D122V01XTMA1</a>	SP005675385	PG-LLGA-5
<a href="#">KITIM73D122V01FLEXTBO1</a>	SP005728208	

**XENSIV™ – TLE4971 magnetic current sensor for auto-  
motive and industrial applications**

High precision miniature coreless magnetic current sensor with integrated current rail for AC and DC measurement. The sensor provides an analog output proportional to the current measured. Additionally, two digital outputs for indication of overcurrent events are available. Infineon’s well established and robust monolithic hall technology enables accurate and highly linear measurement of the magnetic field by the current. The measurement range of up to +-120A allows to sense currents without the negative effects, e.g. hysteresis and saturation, known from core based sensors.



**Features**

- > Minimal insertion resistance 220  $\mu$ W & inductance <1 nH
- > High dynamic range
- > High peak current
- > Market leading thermal performance
- > Fast over current detection (OCD)
- > Small size

**Competitive advantage**

- > Small size on PCB, highest ampacity for integrated current rails, low weight (0,17 g)

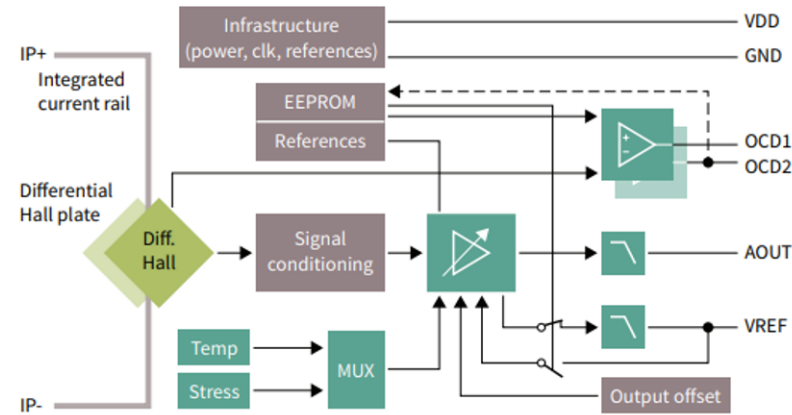
**Benefits**

- > Lower system costs and higher efficiency

**Target applications**

- > Solar inverters
- > On Board Chargers (OBC)
- > High voltage auxiliary drives
- > Industrial drives
- > Servo drives
- > PV inverters
- > Charging applications

**Block diagram**



**Product collaterals / Online support**

[Product family page](#)

**Product overview incl. data sheet link**

OPN	SP Number	Package
<a href="#">TLE4971A025N5UE0001XUMA1</a>	SP005737188	PG-TISON-8
<a href="#">TLE4971A025N5E0001XUMA1</a>	SP005737132	PG-TISON-8
<a href="#">TLE4971A050N5UE0001XUMA1</a>	SP005737196	PG-TISON-8
<a href="#">TLE4971A050N5E0001XUMA1</a>	SP005737136	PG-TISON-8
<a href="#">TLE4971A075N5UE0001XUMA1</a>	SP005737200	PG-TISON-8
<a href="#">TLE4971A075N5E0001XUMA1</a>	SP005737179	PG-TISON-8
<a href="#">TLE4971A120N5UE0001XUMA1</a>	SP005737204	PG-TISON-8
<a href="#">TLE4971A120N5E0001XUMA1</a>	SP005737183	PG-TISON-8

## AIROC™ CYW20819 Bluetooth® & Bluetooth® LE system on chip

The AIROC™ CYW20819 dual mode Bluetooth® SoC builds upon the market proven AIROC™ Bluetooth® and Bluetooth® LE family of SoCs. The CYW20819 enables ultra low-power high performance wireless connectivity for a variety of IoT applications. The CYW20819 SoC provides reliable Bluetooth® and Bluetooth® LE connectivity and is 5.2 core spec compliant. With an integrated Arm® Cortex®-M4 processor, the CYW20819 SoC offers high performance compute suitable for a variety of applications. The CYW20819 SoC is highly integrated with multiple serial interfaces, PWMs, and more. The CYW20819 is designed to support a wide spectrum of Bluetooth® use cases including home automation, sensors (medical, home, security, and industrial), lighting, or any Bluetooth® connected IoT application. The AIROC™ CYW20819 is supported in the AIROC™ Bluetooth® SDK within ModusToolbox™ Software and Tools with copious code examples and documentation enablement for Bluetooth® LE data transfer, RFCOMM, Peripherals, and Bluetooth® Mesh use cases. Infineon also provides in-house AIROC™ CYW20819 globally certified modules for rapid time to market.



### Features

- > Core spec 5.2 compliant with 96-MHz ARM® Cortex®-M4 MCU and LE-2 Mbps support
- > Programmable Tx power up to 4.5 dBm and -95.0 dBm LE Rx sensitivity
- > Infineon branded modules are certified with global regulatory bodies and are offered in multiple feature set types
- > Integrated flash, analog and digital components allowing easy external component interfacing

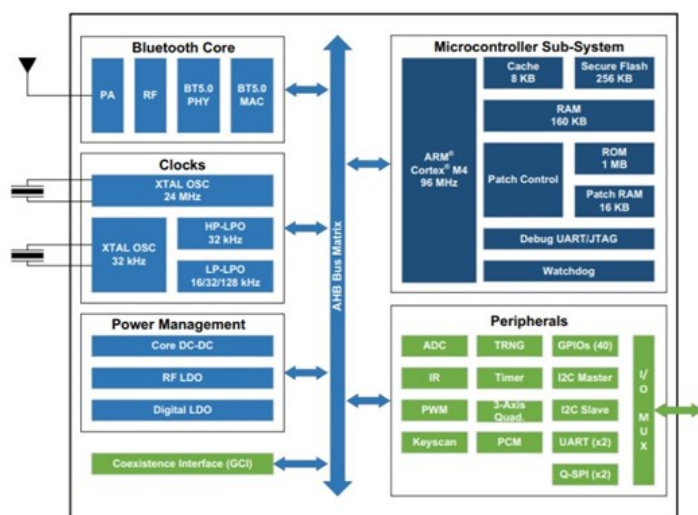
### Benefits

- > Reliable Bluetooth® Connectivity
- > Reduction in dropped packets during transmission improving customer experience
- > Reduced development costs and faster time to market with fully certified modules
- > Reduced BOM and faster time to develop with external sensors

### Target applications

- > Smart home automation: residential lighting, household appliances, thermostat, control panels, smart locks
- > Smart Building: access & occupancy control, air quality, ambient monitoring, commercial lighting
- > Industrial: factory automation, industrial lighting, sensor nodes, sensor hub, control, industrial robotics, asset tracking
- > Medical / Healthcare: blood pressure monitors, thermometer, nebulizers, CPAP machines, fall-detect devices, hospital sensors

### Block diagram



Product collaterals / Online support

[Product page](#)

Product overview incl. data sheet / user manual link

OPN	SP Number	Package
<a href="#">CYW20819A1KFBG</a>	SP005651107	PG-VFBGA-62
<a href="#">CYW20819A1KFBGT</a>	SP005651119	PG-VFBGA-62
<a href="#">CYBT-213043-02</a>	SP005673429	LG-MLGA-35
<a href="#">CYBT-213043-EVAL</a>	SP005673431	
<a href="#">CYW920819EVB-02</a>	SP005664451	

## AIROC™ CYW20820 Bluetooth® & Bluetooth® LE system on chip

The AIROC™ CYW20820 dual mode Bluetooth® system on chip is core spec compliant to 5.2, along with high-performance compute capability integrating an Arm® Cortex®-M4 processor with floating point unit. It is a highly integrated device with high transmit power and embedded flash along with multiple serial interfaces, PWMs, and more.

The CYW20820 SoC provides reliable Bluetooth® and Bluetooth® LE connectivity and is 5.2 core spec compliant. With an integrated Arm® Cortex®-M4 processor with a floating point unit, the CYW20820 SoC offers high performance compute suitable for a variety of applications. The CYW20820 SoC is highly integrated with multiple serial interfaces, PWMs, and more. The CYW20820 is designed to support a wide spectrum of Bluetooth® use cases including home automation, sensors (medical, home, security, and industrial), lighting, or any Bluetooth® connected IoT application.

The AIROC™ CYW20820 is supported in the AIROC™ Bluetooth® SDK within ModusToolbox™ Software and Tools with copious code examples and documentation enablement for Bluetooth® LE data transfer, RFCOMM, Peripherals, and Bluetooth® use cases. Infineon also provides in-house AIROC™ CYW20820 globally certified modules for rapid time to market.



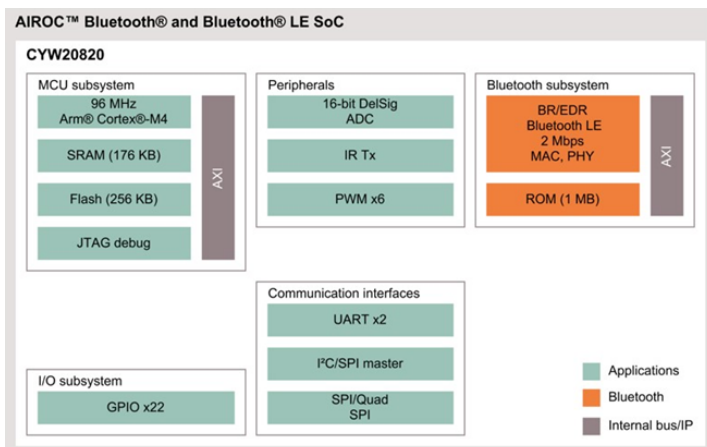
### Features

- > Core spec 5.2 complaint with 96-MHz Arm® Cortex®-M4 MCU and LE-2 Mbps support.
- > Programmable Tx power up to 11.5dBm Tx power and -94.0 dBm Rx sensitivity
- > Infineon branded modules are certified with global regulatory bodies and are offered in multiple feature set types
- > Integrated flash, analog and digital components allowing easy external component interfacing

### Benefits

- > Reliable, long - range Bluetooth® LE Connectivity
- > Reduction in dropped packets during transmission, thereby improving customer experience
- > Reduced development costs and faster time to market with fully certified modules
- > Reduced BOM and faster time to develop with external sensors

### Block diagram



### Target applications

- > Smart home automation: residential lighting, household, appliances, thermostat, control panels, smart locks
- > Smart Building: access & occupancy control, air quality, ambient monitoring, commercial lighting
- > Industrial: factory automation, industrial lighting, sensor nodes, sensor hub, control, industrial robotics, asset tracking
- > Medical / Healthcare: blood pressure monitors, thermometer, nebulizers, CPAP machines, fall-detect devices, hospital sensors

### Product collaterals / Online support

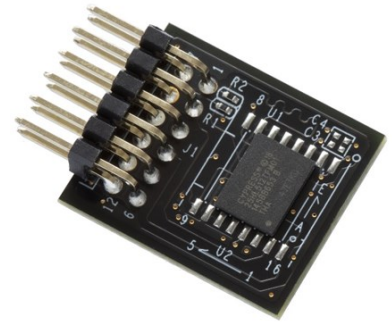
[Product page](#)

### Product overview incl. data sheet / user manual link

OPN	SP Number	Package
<a href="#">CYW20820A1KFBG</a>	SP005651151	PG-VFBGA-62
<a href="#">CYW20820A1KFBGT</a>	SP005673635	PG-VFBGA-62
<a href="#">CYBT-243053-02</a>	SP005673439	LG-MLGA-35
<a href="#">CYBT-243053-EVAL</a>	SP005673441	
<a href="#">CYW920820EVB-02</a>	SP005664453	

## EVAL-S25HL512T - Pmod-compatible module with SEMPER™ NOR flash

EVAL-S25HL512T, also referred to as the SEMPER-S25HL512T memory module, is a low cost Pmod-compatible memory module which incorporates a 512Mb 3.3 V SEMPER™ NOR flash memory. This memory module enables quick and easy integration of the SEMPER™ NOR flash into any development kit.



### Features

- > Supports SPI, dual SPI or quad SPI with 3.3 V I/Os
- > Connects to any host platform (MCU/SoC)
- > Ideal for use with SEMPER™ SDK

### Target applications

- > Industrial
- > Automotive
- > Communications
- > Data center

### Benefits

- > This memory module enables quick and easy integration of the SEMPER™ NOR flash into any development kit.

### Product collaterals / Online support

[Board page](#)

### Support tool: SEMPER™ Solutions Hub



### Product overview incl. user manual link

OPN	SP Number
<a href="#">EVAL-S25HL512T</a>	SP005735942