TRAVEO™ T2G cluster Automotive solutions

Device Overview

December 2025

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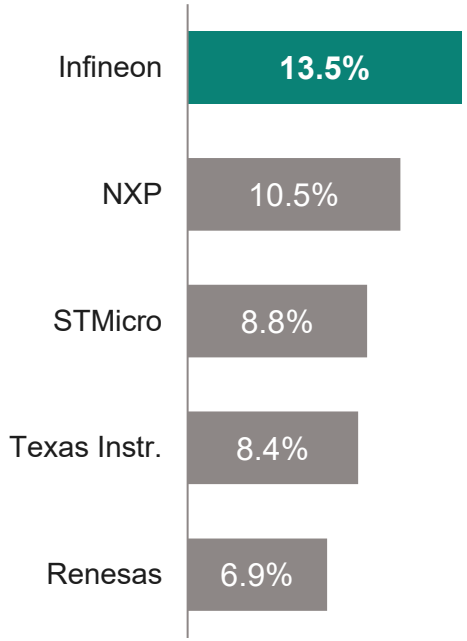
Infineon is clear #1 in Automotive and power semiconductors, and also #1 in the overall microcontroller market

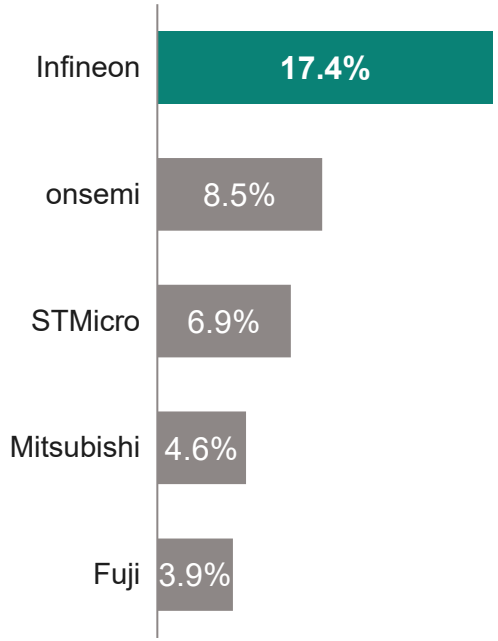
Automotive semiconductors

2024 total global market: USD 68.4bn[1]



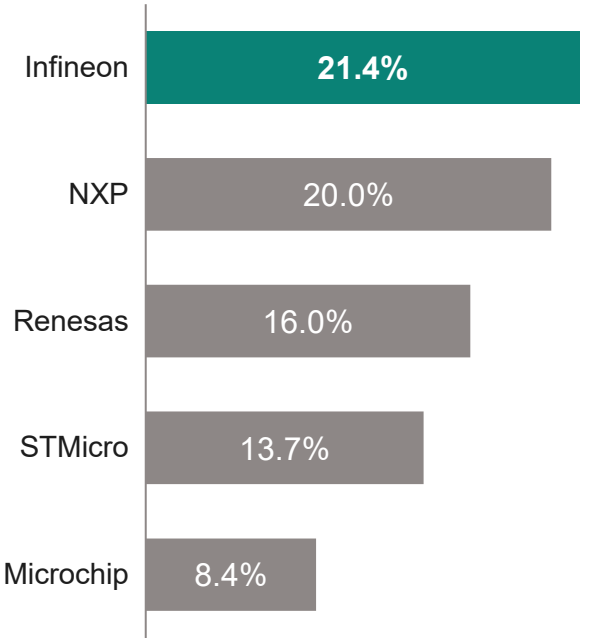
Power discretes and modules

2024 total global market: USD 32.8bn[2]



Microcontroller suppliers

2024 total global market: USD 22.3bn[3]



1 TechInsights: Automotive Semiconductor Vendor 2024 Market Shares. March 2025. | **2** Based on or includes research from Omdia: Power Semiconductor Market Share Database – 2H25 (2024 Base Year). October 2025. | **3** Based on or includes research from Omdia: Annual 2001-2024 Semiconductor Market Share Competitive Landscaping Tool – 2Q25. August 2025. | Results are not an endorsement of Infineon Technologies AG. Any reliance on these results is at the third party's own risk.

Infineon‘s Automotive MCU family
When safe, real-time performance makes the difference

Why Infineon Automotive MCU?

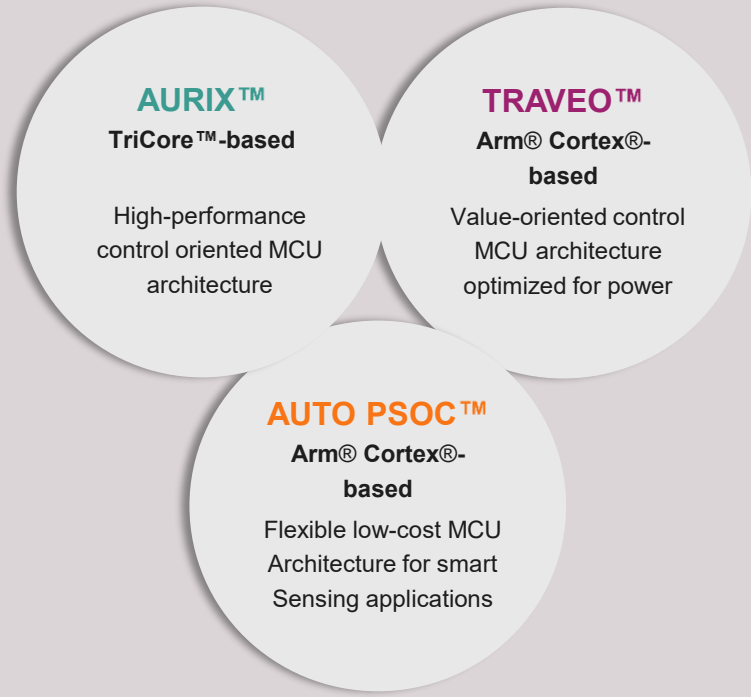
No.1 Automotive MCU supplier worldwide

Proven solution in the field.
Billions of Automotive MCUs shipped
- ~700 million AURIX™
- >700 million TRAVEO™
- >300 million PSOC™ on the road

The Product of choice by OEMs

Infineon will continue supporting our customers success through system knowledge and strong commitment in Automotive

AURIX™, TRAVEO™ and PSOC™ MCUs perform when required



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Automotive megatrends

Automotive megatrends

Electrification

Electrified transportation

Connectivity

Totally connected, digitized

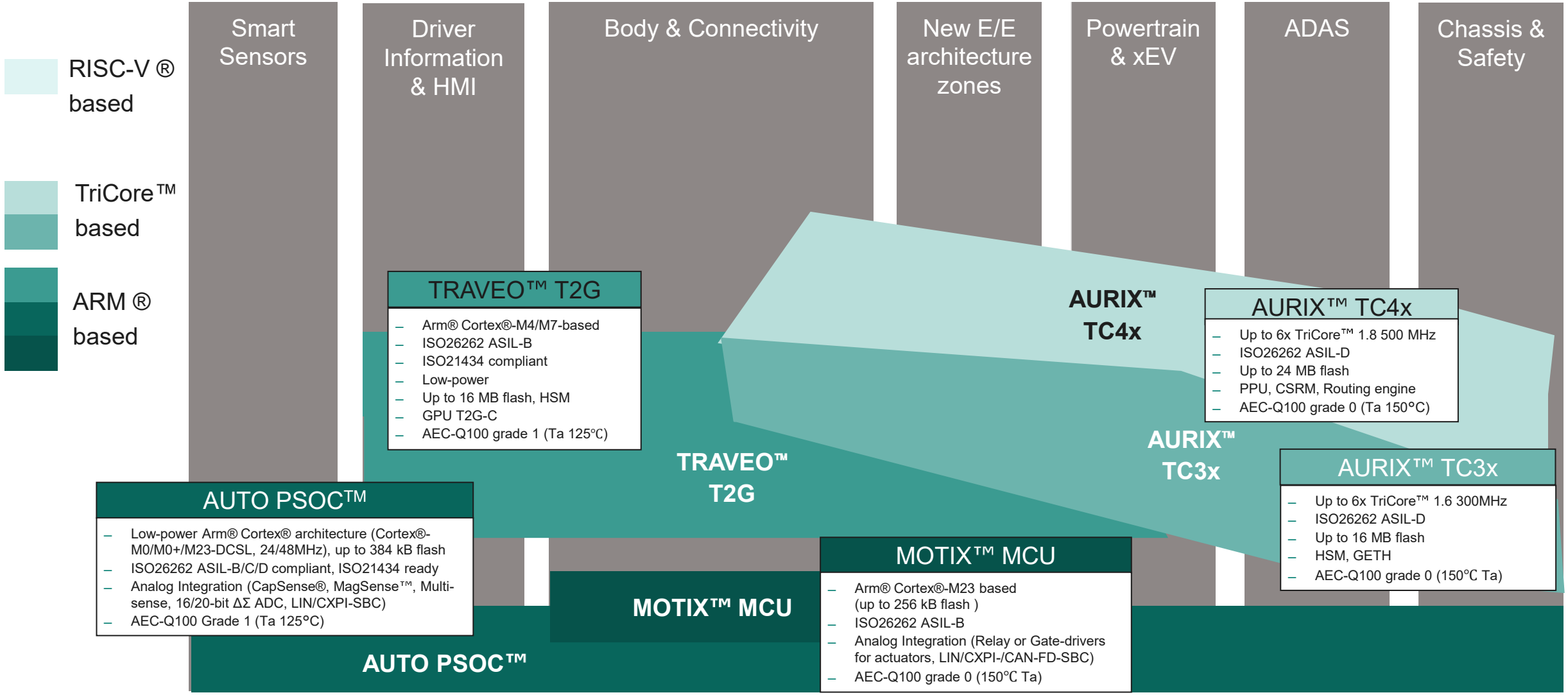
Autonomy

Levels 1 - 5

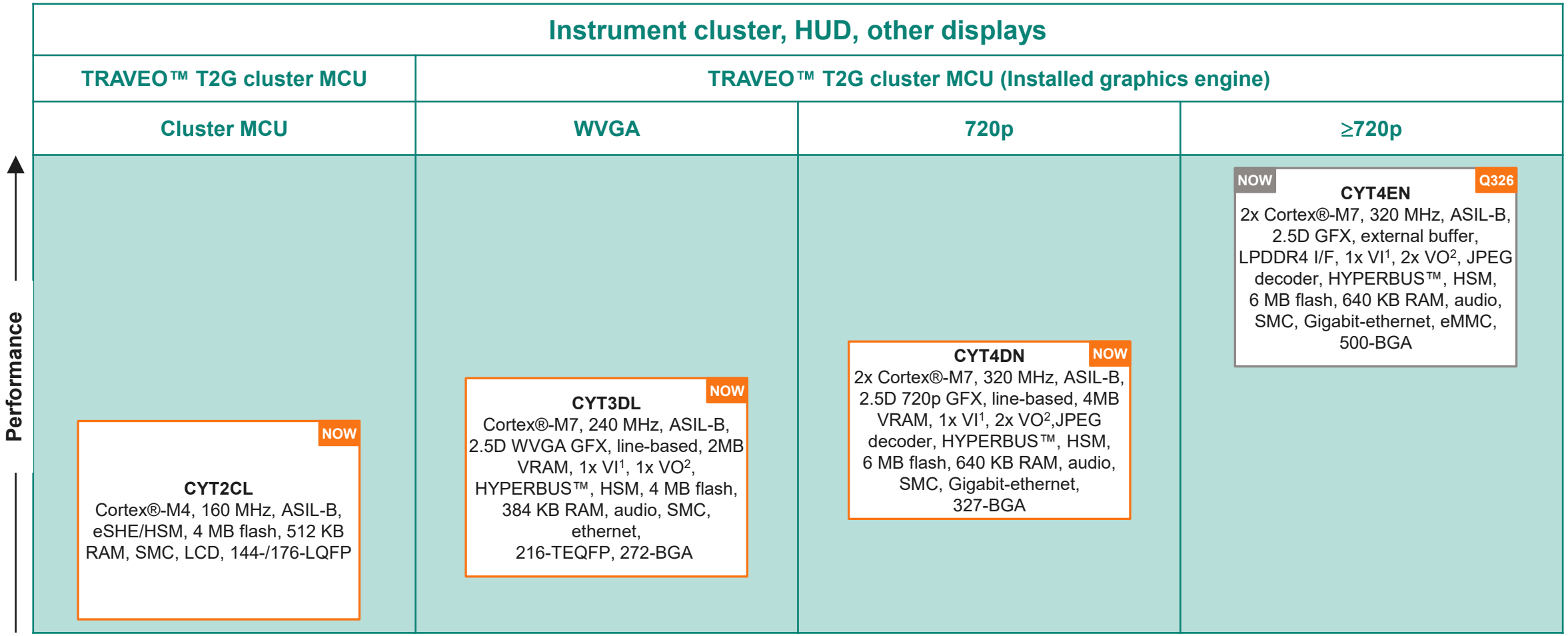
Implications for TRAVEO™ T2G

- Low-power to support electrification and digitization of the vehicle
- Increasing functionality requires more performance
- Sensor proliferation drives increasing need for bandwidth
- Increase in safety and security requirement

Infineon Microcontroller – most scalable portfolio
Successfully covering the entire range of automotive applications



TRAVEO™ T2G cluster MCU portfolio



[1] VI = Video input
[2] VO = Video output

	Concept	Development	ES sampling	Production
Status				
Availability			QQYY	QQYY

TRAVEO™ T2G Cluster portfolio scalability

Family	Flash memory Size	Pin count: LQFP/TQFP 144-pin	LQFP/TQFP 176-pin	LQFP/TQFP 216-pin	BGA 272-ball	BGA 327-ball	BGA 500-ball
CYT4EN	6 MB DDR	High-end with graphics					640 KB*
CYT4DN	6 MB					640 KB* 4 MB**	
CYT3DL	4 MB			384 KB* 2 MB**	384 KB* 2 MB**		
CYT2CL	4 MB	512 KB*	512 KB*				Entry

Legend: * RAM
** VRAM

Common SW

Software offering

- MCAL[1]
- STL[2]
- FEE[3]

Additional:

Graphics driver

1 MCAL: microcontroller abstraction layer
2 STL: Self-test library
3 FEE: Flash EEPROM emulation

TRAVEO™ T2G on-the-fly and line-based graphics reduces memory footprint

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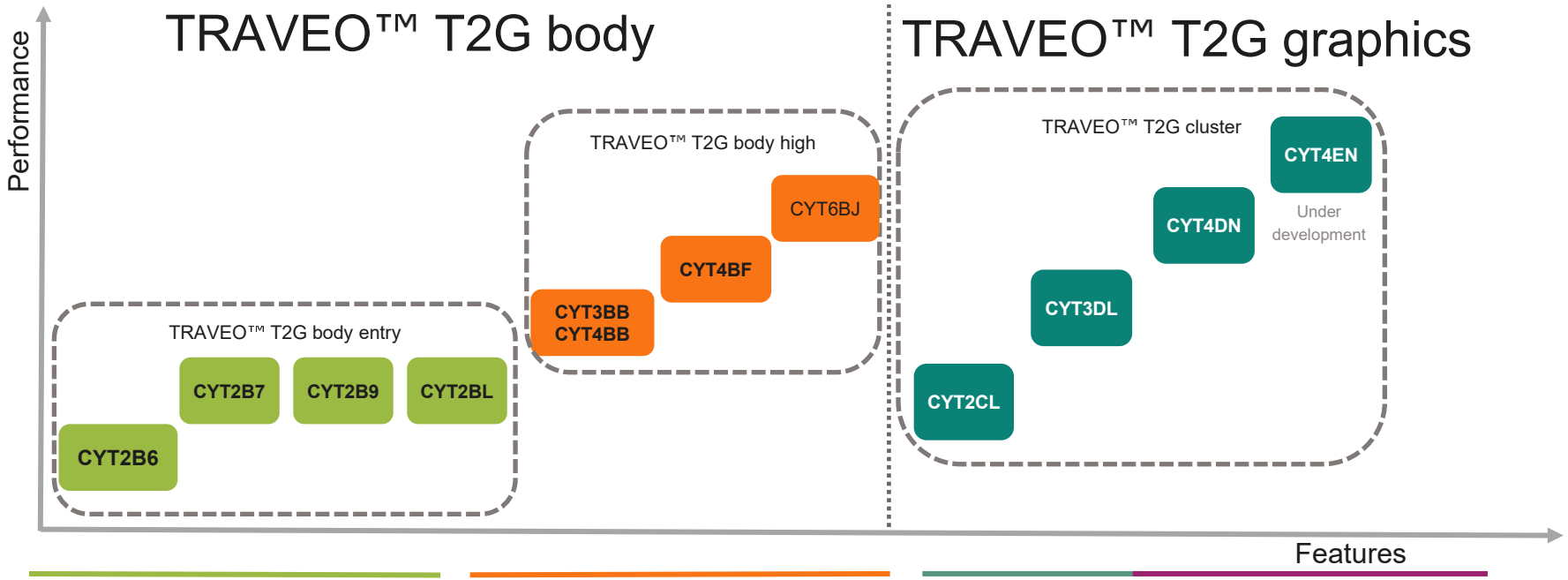
TRAVEO™ T2G – safe, secure, high-performance in low power



TRAVEO™ T2G body entry

- Up to 4 MB flash and 512 KB RAM
- Single core Cortex®-M4 @(up to)160 MHz
- 64 to 176-LQFP

TRAVEO™ T2G body high

- Up to 16 MB flash and 2048 KB RAM
- Up to Quad core Cortex®-M7 @320 MHz
- 100–TQFP to 320–BGA
- HYPERBUS™

TRAVEO™ T2G cluster and graphics

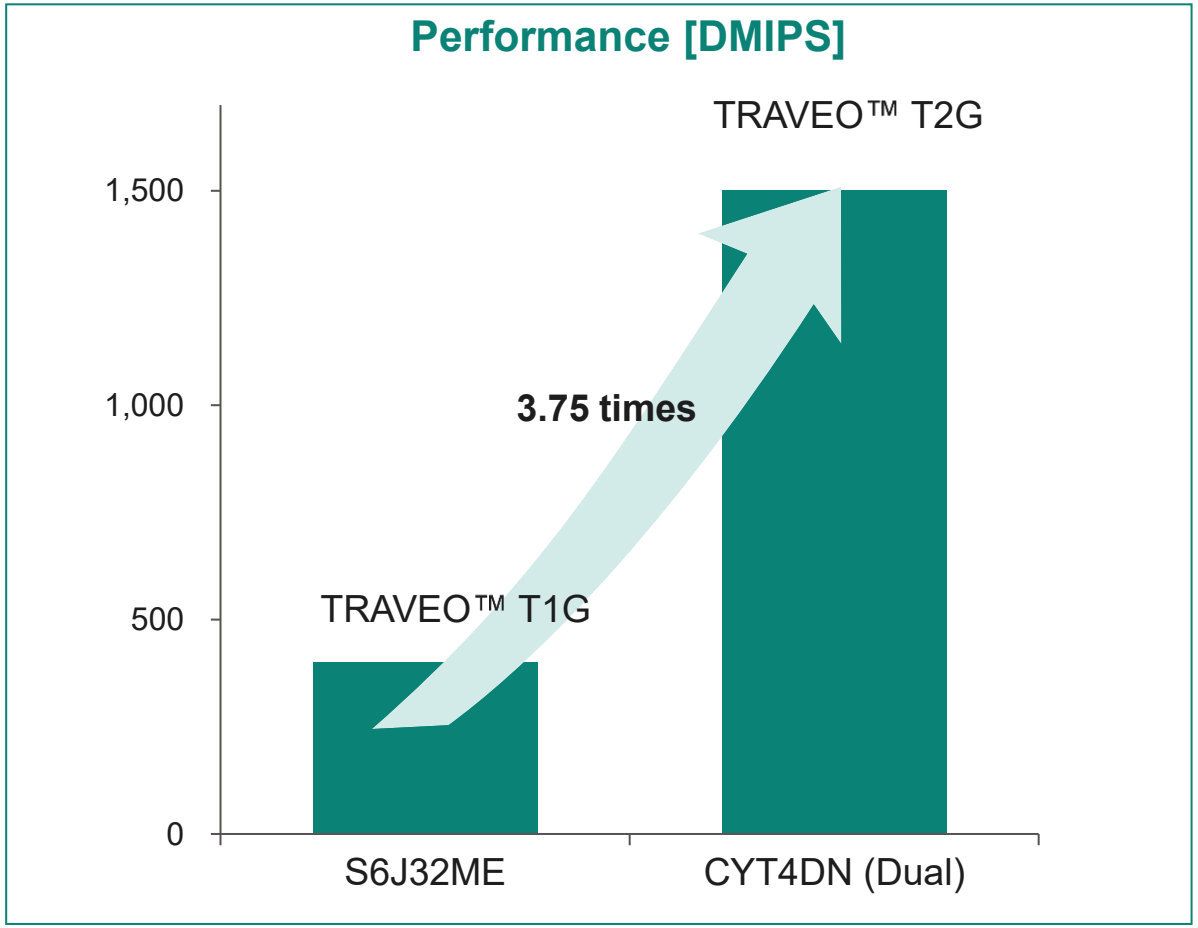
- Up to 6 MB flash and 896 KB RAM
- Up to Dual core Cortex®-M7 @320 MHz with 2.5D GFX and 1080p graphics support
- Video input and output
- HUD feature set
- JPEG decoder
- HYPERBUS™

TRAVEO™ T2G features

- Arm® Cortex®-based
- Low-power
- CAN FD and 1 Gb Ethernet
- 10Base-T1S supported
- Cortex®-M0+ for HSM
- EVITA Full
- ISO 21434-compliant
- ISO 26262 up to ASIL-B
- Compliant up to AEC-Q100 grade 1 (Ta 125°C)
- AUTOSAR-compliant MCAL drivers available

High-performance MCU

- Arm® Cortex®-M cores
  - Single core Cortex®-M4 up to Dual core Cortex®-M7
  - Dedicated Cortex®-M0+ for security
  - Performance up to 1500 DMIPS
- High-speed embedded flash with prefetch/cache
- Dedicated memory- and peripheral-DMA for CPU offloading
- Gigabit ethernet and CAN-FD for high-speed vehicle communication

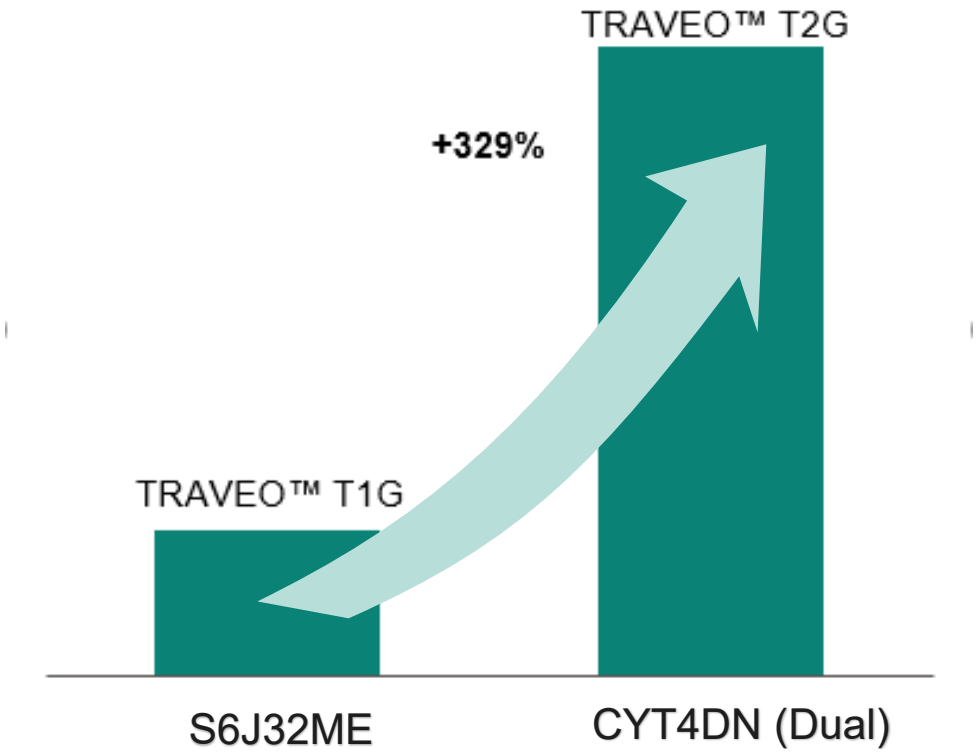


TRAVEO™ T2G provides world-class performance

Power efficiency

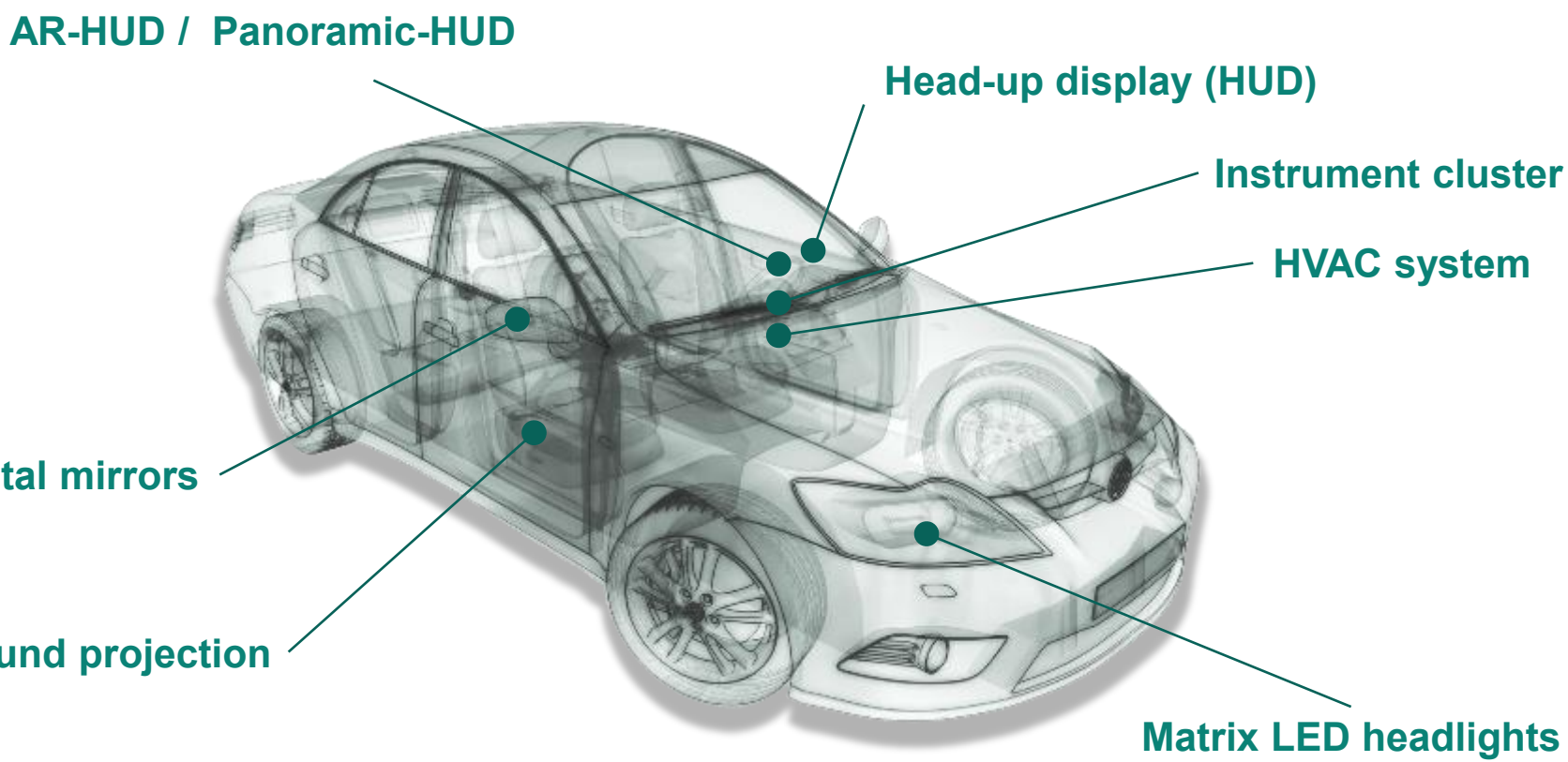
- +329% improvement in power efficiency
- More power saving modes
  - Low-power Active
  - Sleep
  - Low-power Sleep
  - DeepSleep
- DeepSleep mode as low as 50 µA (typical)

Power efficiency [DMIPS/mW]



TRAVEO™ T2G achieves world-class energy efficiency

TRAVEO™ T2G cluster / graphics: Single-chip solutions for graphical applications



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TRAVEO™ key takeaways!
Why TRAVEO™ is better than competition…

- **Multiple core combinations**
  Single core Cortex®-M4, Single/Dual/Quad core Cortex®-M7
- **Low-power consumption**
  50 µA in DeepSleep mode
- **Wide voltage input**
  2.7 V – 5.5 V for both Cortex®-M4 and Cortex®-M7 devices
- **True FOTA**
  Implemented mostly by Hardware, simple to realize
- **Pin-to-pin compatibility**
  Across the body entry (Cortex®-M4) and body high (Cortex®-M7) family
- **Adapting to market needs**
  ISO 21434

» **All collaterals are available on MyICP and/or myinfineon.com!**

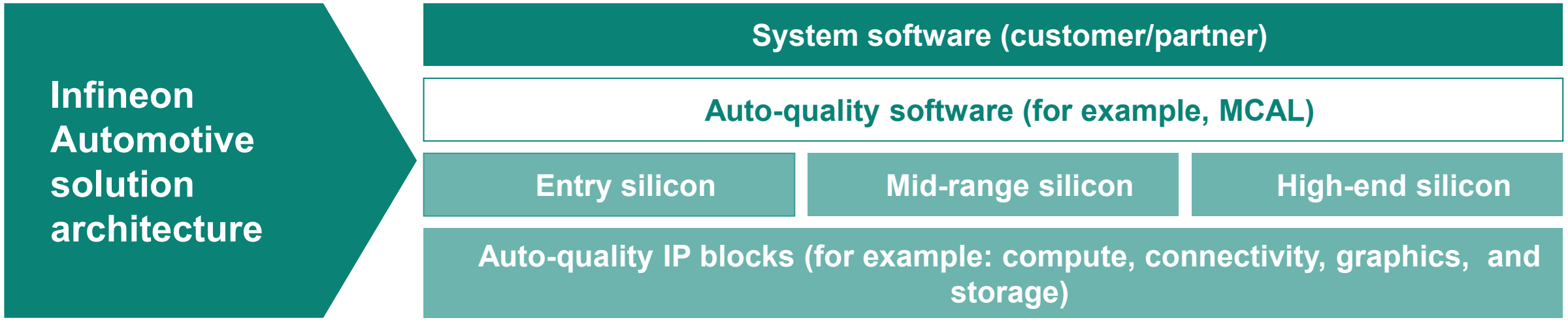
Key features TRAVEO™ T2G cluster

[1] eSHE: enhanced secure hardware extension
[2] HSM: Hardware security module
[3] FOTA: Firmware update over-the-air
[4] RWW: Read while write
[5] Embedded multimedia card

Low-power	– Best in class energy-efficient processing power – Up to 50 µA in DeepSleep mode
Performance	– Dual Arm® Cortex®-M7 – 1500DMIPS
Scalability	– Complete portfolio, – Memory density, – Package lineup and Performance
Safety	– ISO 26262 ASIL-B
Graphics Audio	– 2.5D graphics engine – Sound module, I²S/TDM, PCM-PWM and DAC
Security	– Hardware security module: HSM[2] – Evita full – ISO 21434 compliant
Connectivity	– LIN CXPI SMIF – CAN FD – 1 Gb ethernet
Updatability	– FOTA[3] with RWW[4] flash – eMMC[5] – QSPI/HS-SPI

Infineon scalable platform solutions

- Deliver full range of silicon products per platform
- Enable OEM / Tier 1 software reuse (consistent across platform, generations)
- Deliver best-in-class, auto-quality solution components
- Reduce risk: Infineon is an established Automotive Semiconductor supplier

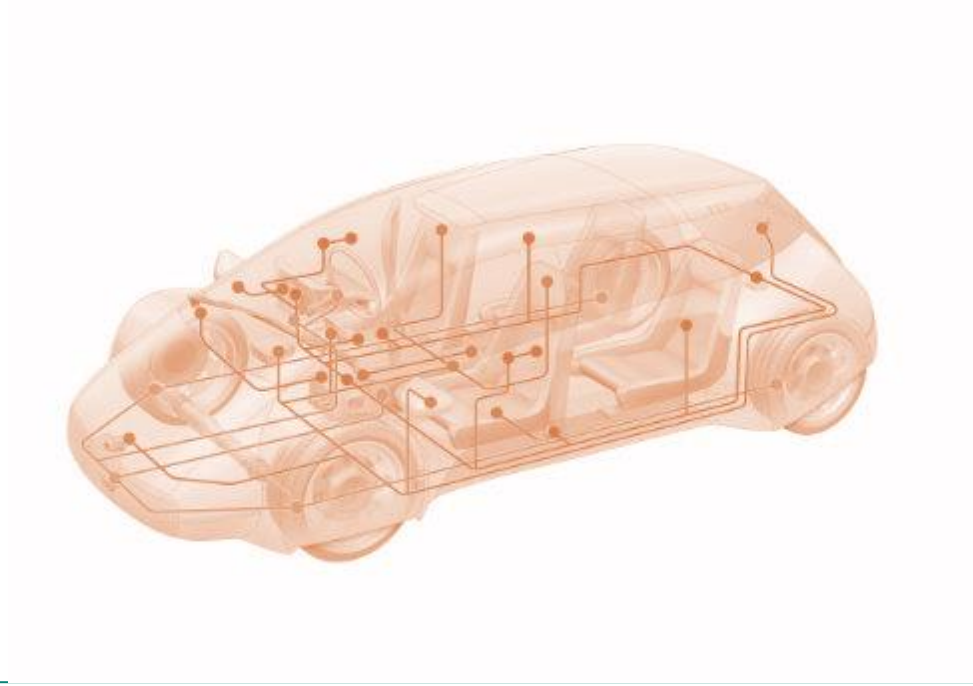


Automotive security

ADAS, autonomous driving, and new digital service models require authentication and secure communication
TRAVEO™ T2G integrates HSM to support secure applications

Connected car at security risk

- Wiretapping
- Disguised identity
- Privacy/identity theft
- Unauthorized feature activation
- Unauthorized tuning
- Unlocking speed limit
- Forgery of driving record
- Hardware/property theft
- Manipulation of safety mechanism

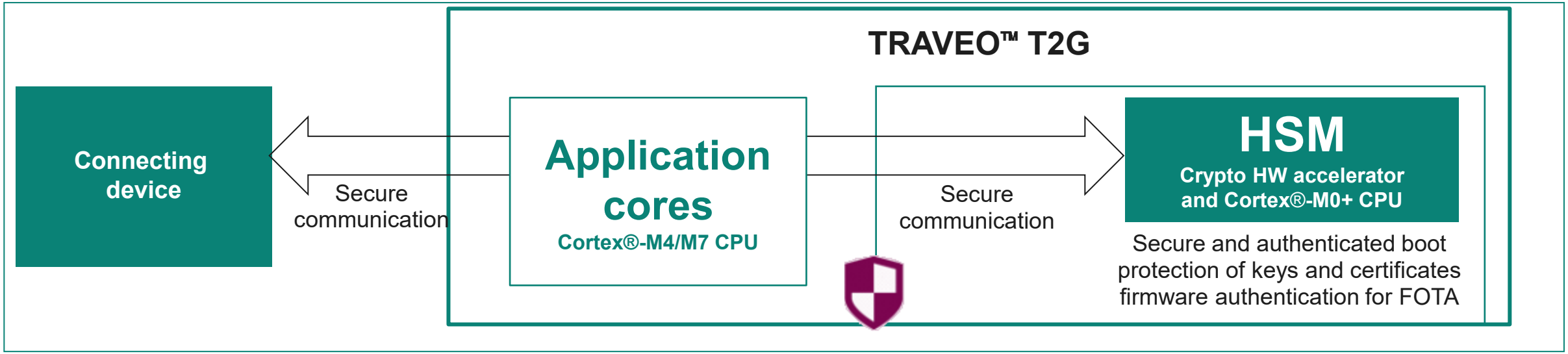


TRAVEO™ T2G keeps connected car secure

TRAVEO™ T2G HSM for security

- Root-of-trust boot ROM and chain-of-trust boot firmware
  - Ensure establishment of hardware isolation between secure and non-secure applications
  - Enable fast authentication of ECU software during secure boot

- Flexible configuration of secure domain for efficient resource utilization
- Generation and storage of device-unique secret AES keys



TRAVEO™ T2G security capabilities - overview

- eSHE/HSM solutions can utilize Cortex®-M0+ and crypto HW accelerator

Hardware accelerated functions

AES	128/192/256-bit keys
TDES	64-bit key
SHA1/2/3	Variable length
RSA and ECC	Vector unit (VU) for asymmetric cipher acceleration offers large integer support of up to 4096-bits
PRNG	Pseudo Random Number Generator
TRNG	True Random Number Generator BSI AIS 31 PTG.2 compliant

Memory and peripheral protection

- Memory protection unit (MPU)
- Shared memory protection unit (SMPU)
- Peripheral protection unit (PPU)
- Protection context mechanism

- Serial memory interface with integrated on-the-fly AES encryption

Lifecycle management (eFuse-based)

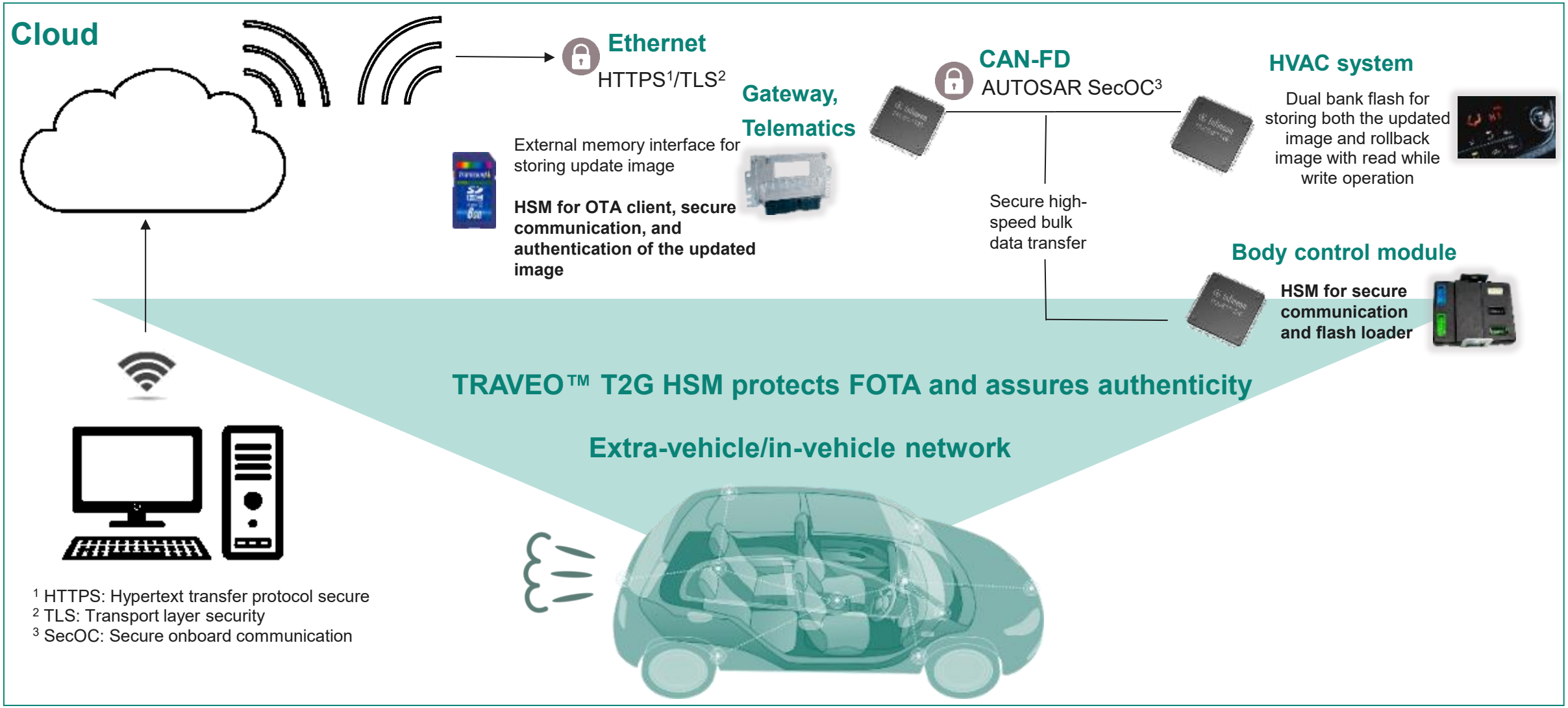
- Normal, secure
- Field failure analysis (RMA)

- JTAG debug and test security

Secure boot

- Cortex®-M0+ boots from ROM, while Cortex®-M4/M7 kept in reset
- ROM code provides root-of-trust
- Cortex®-M0+ authenticates flash image, then starts customer firmware on Cortex®-M0+/M4/M7

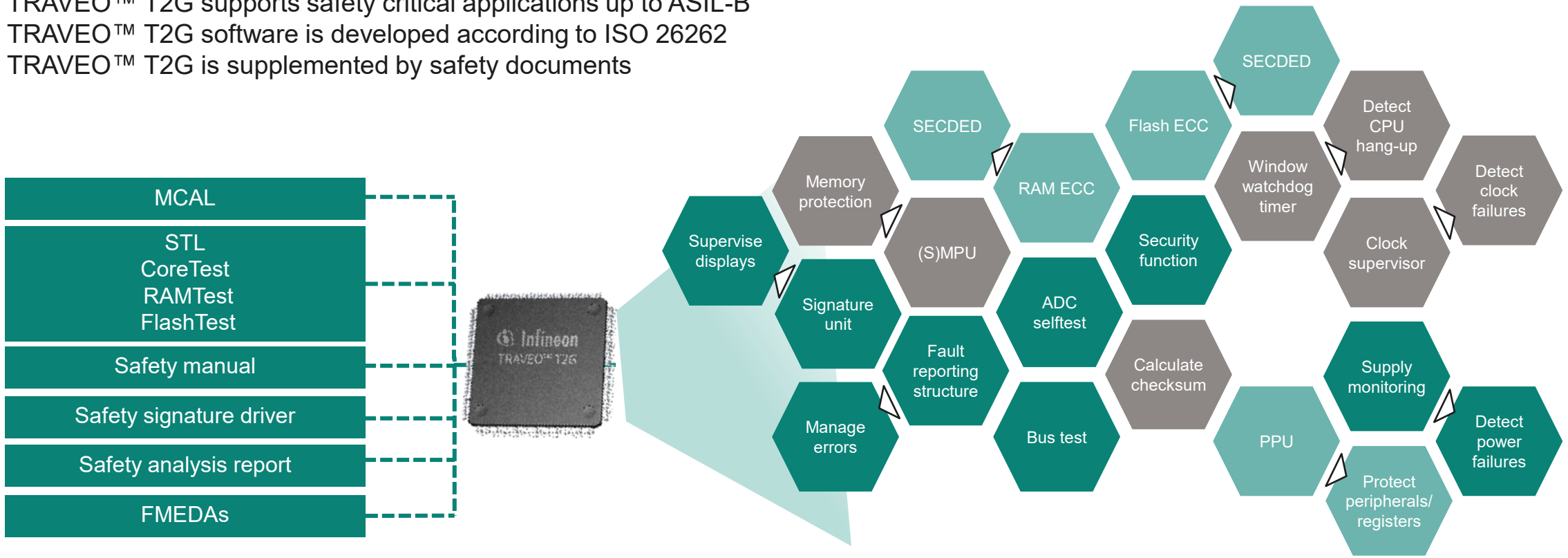
TRAVEO™ T2G use case: Firmware over-the-air (FOTA) update



[1] HTTPS: Hypertext transfer protocol secure
[2] TLS: Transport layer security
[3] SecOC: Secure onboard communication

Functional safety: A holistic system-level approach

- TRAVEO™ T2G is an ISO 26262 safety-element-out-of-context product
- TRAVEO™ T2G supports safety critical applications up to ASIL-B
- TRAVEO™ T2G software is developed according to ISO 26262
- TRAVEO™ T2G is supplemented by safety documents



TRAVEO™ T2G offers safety hardware, software, and documents

Graphics subsystem key features

High-resolution graphics engine with internal VRAM

Feature-rich graphics engine

- 2D and 2.5D rendering
- High resolution
- 720p with internal VRAM

Sophisticated display controller

- Resolutions up to 2880 x 1080
- Arbitrary warping for HUDs

Safety features

- Supports ISO 26262-compliance

Video capture

- RGB and MIPI-CSI2, two or four lanes with a resolution of up to 2880 x 1080

JPEG decoder

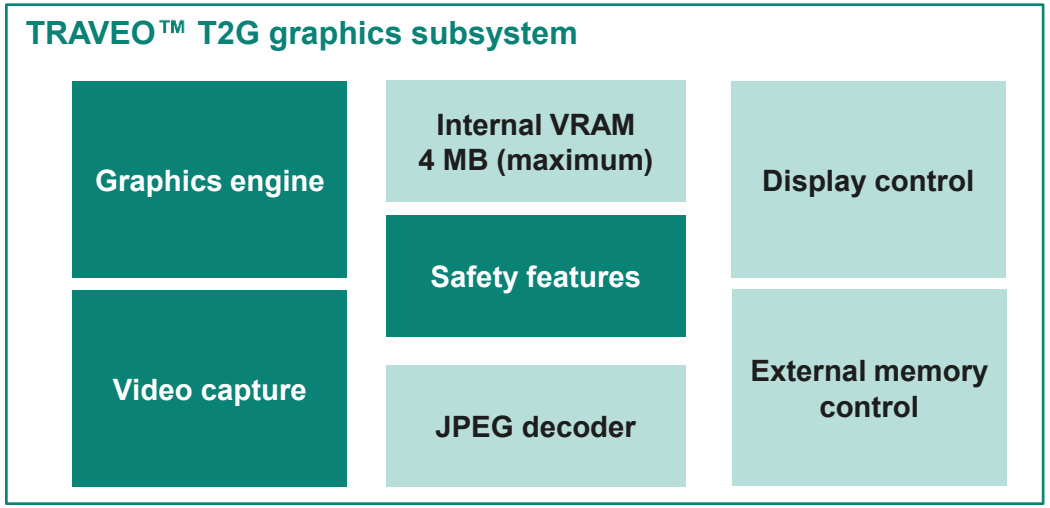
- Supports motion JPEG

Flexible memory interface

- Supports latest high-speed serial memories

Backward-compatible with TRAVEO™

- Rendering in legacy image-based operation (IBO) mode
- Porting guide (graphics driver user guide)



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Comprehensive tools, kits, and software

Software

- Header files and sample driver libraries (SDL)
- AUTOSAR MCAL 4.2.x
- Self test libraries
- Graphics software
- MTB (ModusToolbox™)

Third-party software IDEs

- Green Hills Multi and IAR Embedded Workbench
- iSYSTEM debug and test environment und DTS development environment
- Third-party HMI tools
- Third-party HSM software

Hardware

- Evaluation board
- Lite Kit

Third-party debug hardware

- Green Hills and SuperTrace probe
- IAR I-jet debugging for Arm® Cortex®-M
- Lauterbach

Other support from Infineon

- SPICE-verified software services and JTAG flash programming
- Auto Flash Utility
- Safety manual
- FMEDAs

TRAVEO™ T2G software offering overview

AUTOSAR 4.2.2 SW (ASIL-B)

- MCAL[1]: MCU[2], ADC[3], ICU[4], GPT[5], PWM[6], WDG[7], OCU[8], CAN[9] (-FD support), LIN[10] (master+slave), SPI[11], FLS[12], DIO[13], and PORT
- STL (Self-test libraries): core test, flash test, and RAM test
- FEE (EEPROM emulation)
- Complex device drivers for I²C, UART, program flash
- Multi-core extension for MCAL, offering ASR 4.4 type II multi-core support for selected modules

Graphics software

- Graphics driver (with SDK, with "resource generator"),
- JPEG decode driver,
- Safety signature driver
- Dynamic warping library
- Video UART driver (VUART)

Sample driver library (SDL)

ModusToolbox™ – Development ecosystem with „Peripheral Driver Layer"

Software services/customization

- Infineon SW teams have leading expertise in the fields: AUTOSAR, graphics, functional safety, and security
- Customized SW modules available upon request
- Compiler revalidation service

[1] MCAL: Microcontroller abstraction layer
[2] MCU: Microcontroller
[3] ADC: Analog digital converter
[4] ICU: Input capture unit
[5] GPT: General purpose timer
[6] PWM: Pulse width modulation
[7] WDG: Watchdog
[8] OCU: Output compare unit
[9] CAN: Controller area network
[10] LIN: Local interconnected network
[11] SPI: Serial peripheral interface
[12] FLS: flash
[13] DIO: Digital input/output

TRAVEO™ T2G software re-selling partners

Region	Partner (handles SLA, delivers SW, provides support)	Status	Contact
EU	Hitex	Ready	click
EU	Bluewind	Ready	click
EU	ETAS	Ready	click
EU	eInfochips UK Ltd	Ready	click
APAC	Hancom Academy	Ready	click
APAC	Uniquest	Ready	click
GC	Intron	Ready	click
GC	GRC Automotive technology	Ready	click
GC	Shenzhen MJZH Technology	Ready	click
US	Neutron Automotive Controls Inc	Ready	click
US	Hitools (Hitex US)	Ready	click
JP	Hitachi ICS	Ready	click
JP	ETAS	Ready	click

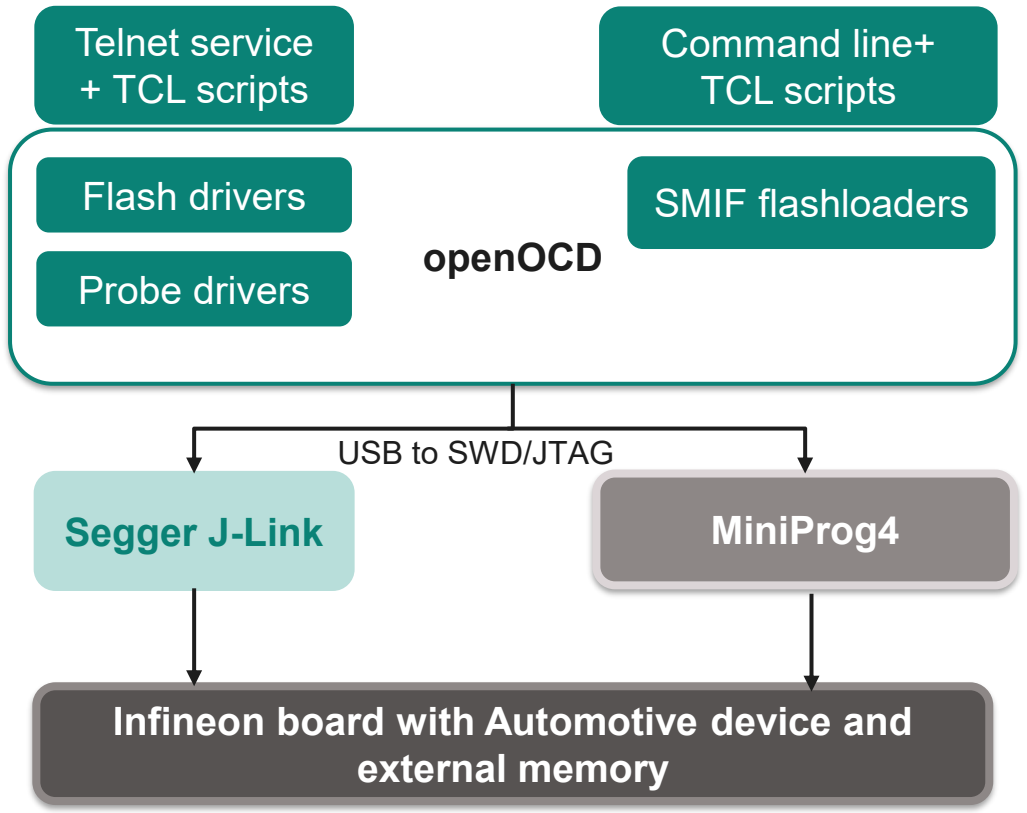
Security ecosystem partners for TRAVEO™

Partner	Product	Status	Contact
Vector Informatik	Microsar HSM	Ready	click
ETAS	CycurHSM	Ready	click
Elektrobit	ZenturHSM	Ready	click
Integrity security services	FlexHSM	Ready	click
G-Pulse	gHSM_TVII	Ready	click
GRC	GRC Crypto Stack	Ready	click
Autocrypt	Autocrypt HSM	Ready	click
Fescaro	FESCARO HSM	Ready	click

AutoFlashUtility – programming tool for Automotive devices

Software tool for programming of TRAVEO™ T2G and PSOC™ HV devices

- Performs program, erase, verify, and read operations on the flash of the target device
- Supports internal and external flash on the Infineon CPU boards with target device
- Works with entire device flash, a specific region, a sector, and even a byte of a device
- Based on the open on-chip debugger (OpenOCD) open source
- Interacts with the target device via the JTAG/SWD debug ports
- Supports MiniProg4 and Segger J-Link probes
- Supports Windows only



Infineon programmer and MiniProg4 (all TRAVEO™ T2G)

Kit contents

Note:

Contact your local Infineon sales engineer or FAE or create a support case.

- The CY8CKIT-005-A PSOC™ MiniProg4 Program and Debug Kit includes:
  - MiniProg4
  - 10-pin ribbon cable
  - USB-A to USB-C cable
  - USB-A to USB-C Cable
  - Quick start guide (QSG)

For more information on CY8CKIT-005-A.

TRAVEO™ extensive Kit ecosystem
Something for every design adventure and budget!

TRAVEO™ T2G cluster entry

- Develop and test the key functionalities provided by TRAVEO™ T2G Cluster entry such as LCDC, sound, and **UART** communication

- CYTVII-C-E-4M-176-CPU

TRAVEO™ T2G Cluster 2D

- Design and debug easily the T2G-C 2D devices
- **Graphics** driver
- **MJPEG**, **Ethernet**, **Audio** interface, **Display** interface, HYPERFLASH™/HYPERRAM™
- Purchasable as **SET** or independently

- CYTVII-C-2D-4M-216-CPU
- CYTVII-C-2D-4M-216-SET
- CYTVII-C-2D-6M-327-CPU
- CYTVII-C-2D-6M-327-SET
- CYTVII-C-2D-6M-DDR-CPU
- CYTVII-C-2D-6M-DDR-SET

TRAVEO™ T2G Cluster Low cost kits

- **Low-cost**
- **Easy to use** evaluation board based on the TRAVEO™ T2G cluster families supporting **Arduino, mikroBUS**
- Supported by our **Certified HMI tool partners**

- KIT_T2G_C-2D-4M_LITE
- KIT_T2G_C-2D-6M_LITE

< $350

TRAVEO™ T2G Lite kits supported by ModusToolbox™

TRAVEO™ T2G Lite kits	ModusToolbox™ in 3Q 2024
KIT_T2G_C-2D-4M_LITE Fully supported by ModusToolbox™ Supported by our HMI tool partners	ModusToolbox™ Software is a modern, extensible development ecosystem supporting a wide range of Infineon microcontroller devices, including **PSOC™ Arm® Cortex® microcontrollers**, **TRAVEO™ T2G Arm® Cortex® microcontroller**. Provided as a collection of development tools, libraries, and embedded runtime assets, ModusToolbox™ Software is architected to provide a flexible and comprehensive development experience
KIT_T2G_C-2D-6M_LITE Fully supported by ModusToolbox™ Supported by our HMI tool partners	

- User manual
- Getting started
- ModusToolbox™ product presentation
- GitHub
- Community support

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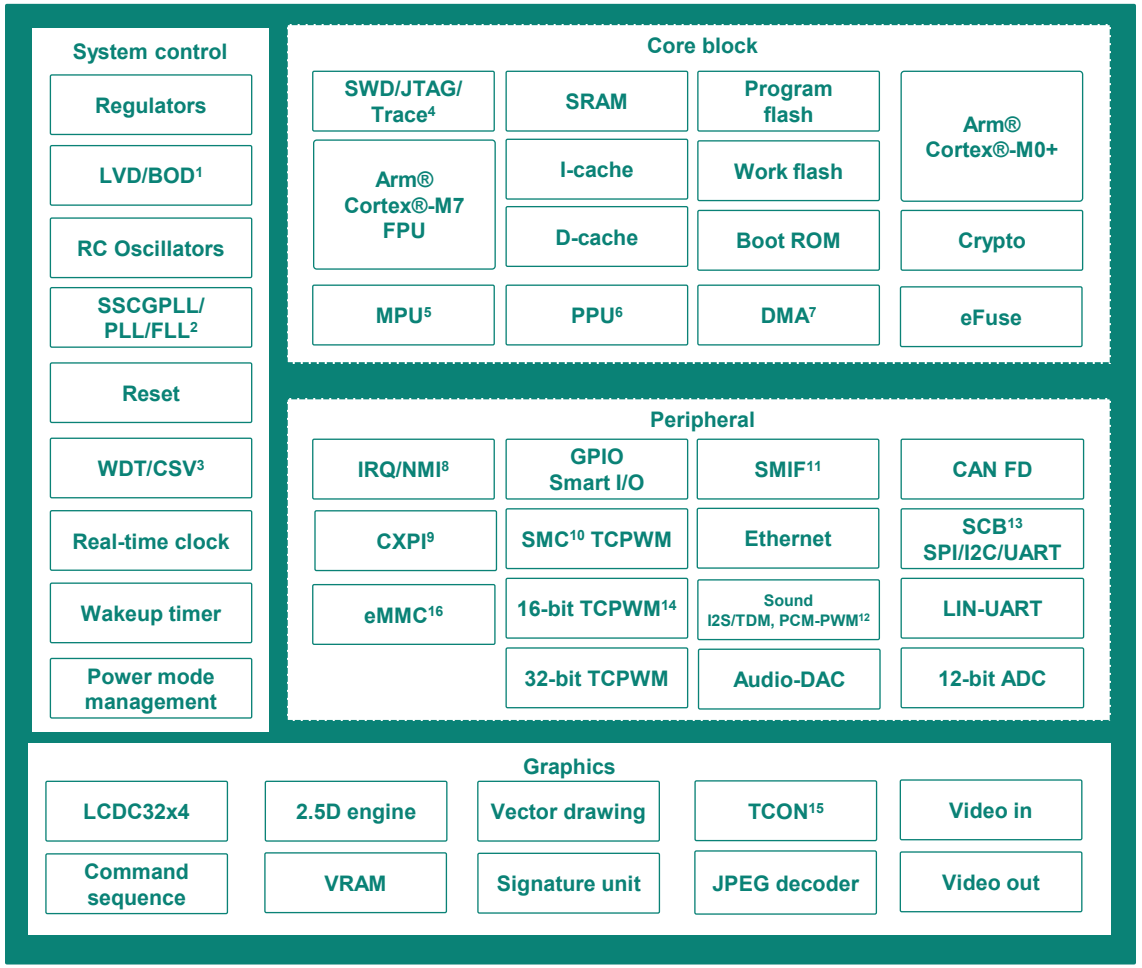
Feature overview - TRAVEO™ T2G cluster MCU family



[1] Low-voltage detection/brownout detection
[2] Spread-spectrum clock generator/phase-locked loop
[3] Watchdog timer/clock supervisor
[4] Serial wire debug/on-chip debug (Joint test Action Group)
[5] Memory protection unit
[6] Peripheral protection units
[7] Direct memory access
[8] Non-maskable interrupt/interrupt request
[9] Clock extension peripheral
[10] Stepper motor control
[11] Serial memory interface
[12] Inter-IC sound bus/pulse-code modulation/pulse-width modulation
[13] Serial communication block
[14] Timer/counter/pulse-width modulation
[15] Timing controller
[16] Embedded Multi-Media Card

CYT2CL series

TRAVEO™ T2G cluster MCU family

Applications

Instrument cluster and AVAS

Features

- **32-bit MCU core systems**
  - 160 MHz Arm® Cortex®-M4 and Cortex®-M0+
  - 4 MB flash, 512 KB SRAM, and 128 KB work flash
- **2.7 V or 5.5 V supply voltages**
- **Interfaces**
  - Up to 4 channel CAN FD, up to 12 channel SCB, and 2 channel LIN-UART, 2 channel CXPI
  - 1 channel SMIF: Single / Dual / Quad / Octal-SPI / HYPERBUS™
- **Cluster features**
  - 6 channel SMC+ZPD
  - LCDC 32x4
  - Sound module, TDM, PCM-PWM
- **Packages**
  - 176/144-LQFP
- **ISO 21434 compliant***

* Deliverable available in Q126

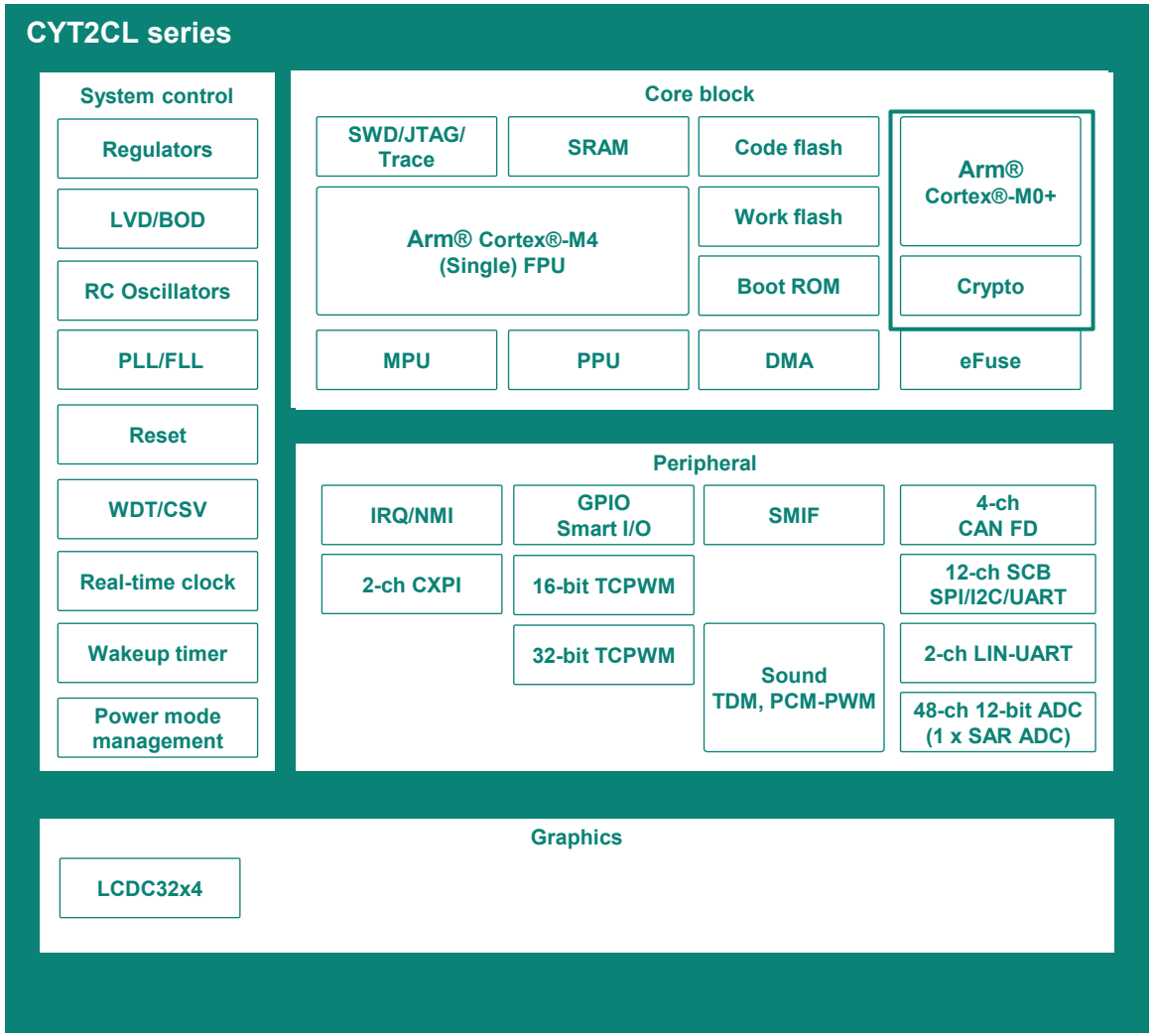
Collateral

Datasheet: CYT2CL series

Availability

Sampling: Now

Production: Now



CYT3DL series

TRAVEO™ T2G cluster MCU family (Installed graphics engine)

Applications

Instrument cluster, HUD, HVAC, and Lighting

Features

- **32-bit MCU core systems**
  - 240 MHz Arm® Cortex®-M7 and Cortex®-M0+
  - 4 MB flash, 384 KB RAM, and 128 KB work flash
- **1.15 V, 3.3 V and 5.0 V supply voltages**
- **Interfaces**
  - Ethernet, 4 channel CAN FD, Up to 12 channel SCB, and 2 channel LIN-UART
  - 2 channel SMIF: Single / Dual / Quad / Octal-SPI / HYPERBUS™
- **Cluster features**
  - 6 channel SMC + ZPD
  - 2.5D engine, 2MB VRAM, Vector drawing,
  - Video-out: 2 channel (LVDS, RGB)/ Video-in: 1 channel (RGB, MIPI)
  - Sound module, I²S/TDM, PCM-PWM and DAC
- **Packages**
  - 216-TQFP, 272-BGA
- **ISO 21434 compliant***

* Deliverable available in Q126

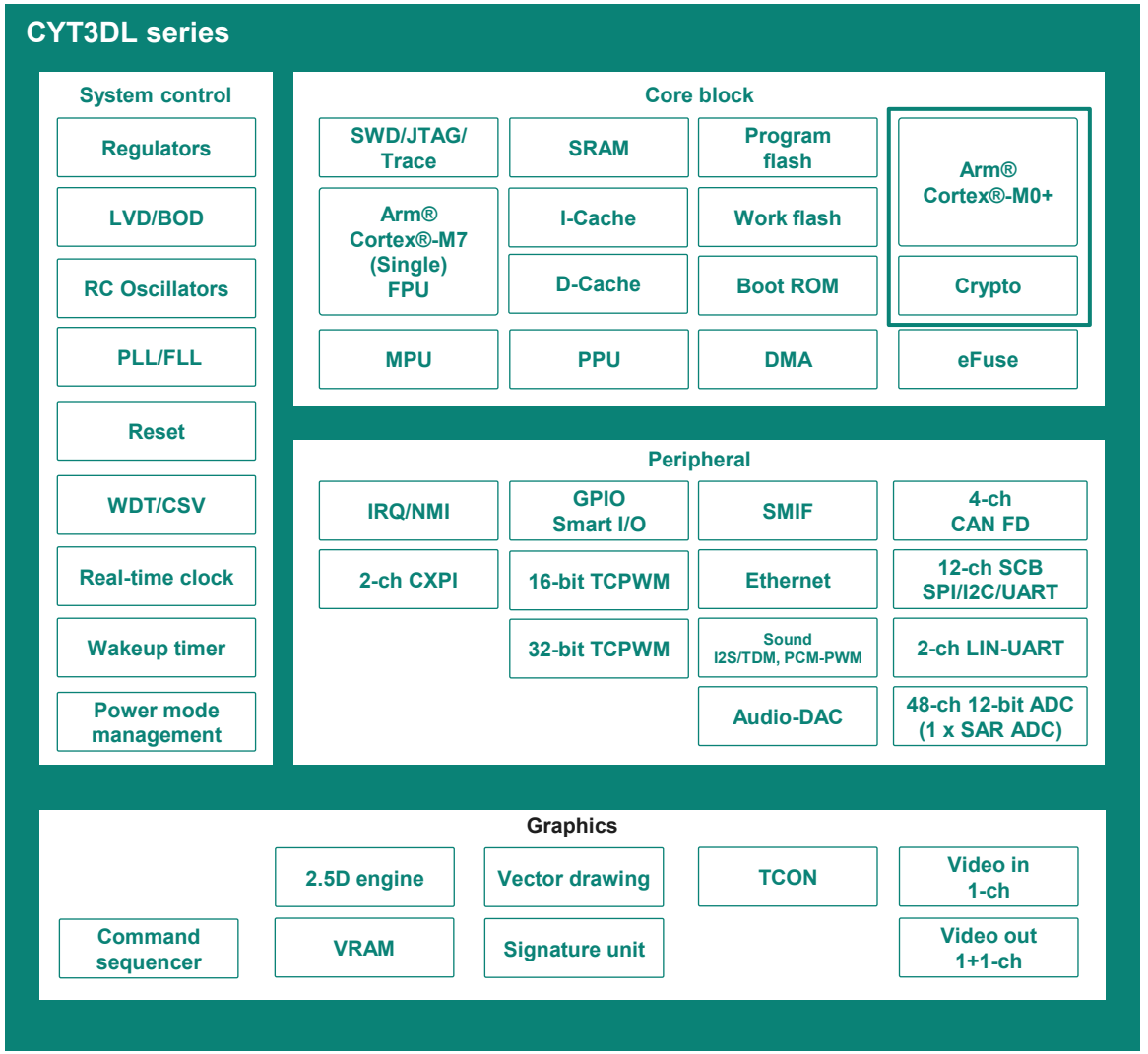
Collateral

Datasheet: CYT3DL series

Availability

Sampling: Now

Production: Now



CYT4DN series

TRAVEO™ T2G cluster MCU family (Installed graphics engine)

Applications

Instrument cluster + HUD, Lighting

Features

- **32-bit MCU core systems**
  - 2x 320-MHz Arm® Cortex®-M7 and Cortex®-M0+
  - 6 MB flash, 640 KB RAM, and 128 KB work flash
- **1.15 V, 1.8 V, 3.3 V and 5.0 V supply voltages**
- **Interfaces**
  - Gigabit-Ethernet, 4 channel CAN FD, 12 channel SCB, and 2 channel LIN-UART
  - 2 channel SMIF: Single / Dual / Quad / Octal-SPI / HYPERBUS™
- **Cluster features**
  - 6 channel SMC + ZPD
  - 2.5D engine, 4M VRAM, Vector drawing, JPEG decoder
  - Video-out: 2 channel (LVDS, RGB)/ Video-In: 1 channel (RGB, MIPI)
  - Sound module, I²S/TDM, PCM-PWM and DAC
- **Packages**
  - 327-BGA
- **ISO 21434 compliant***

* Deliverable available in Q126

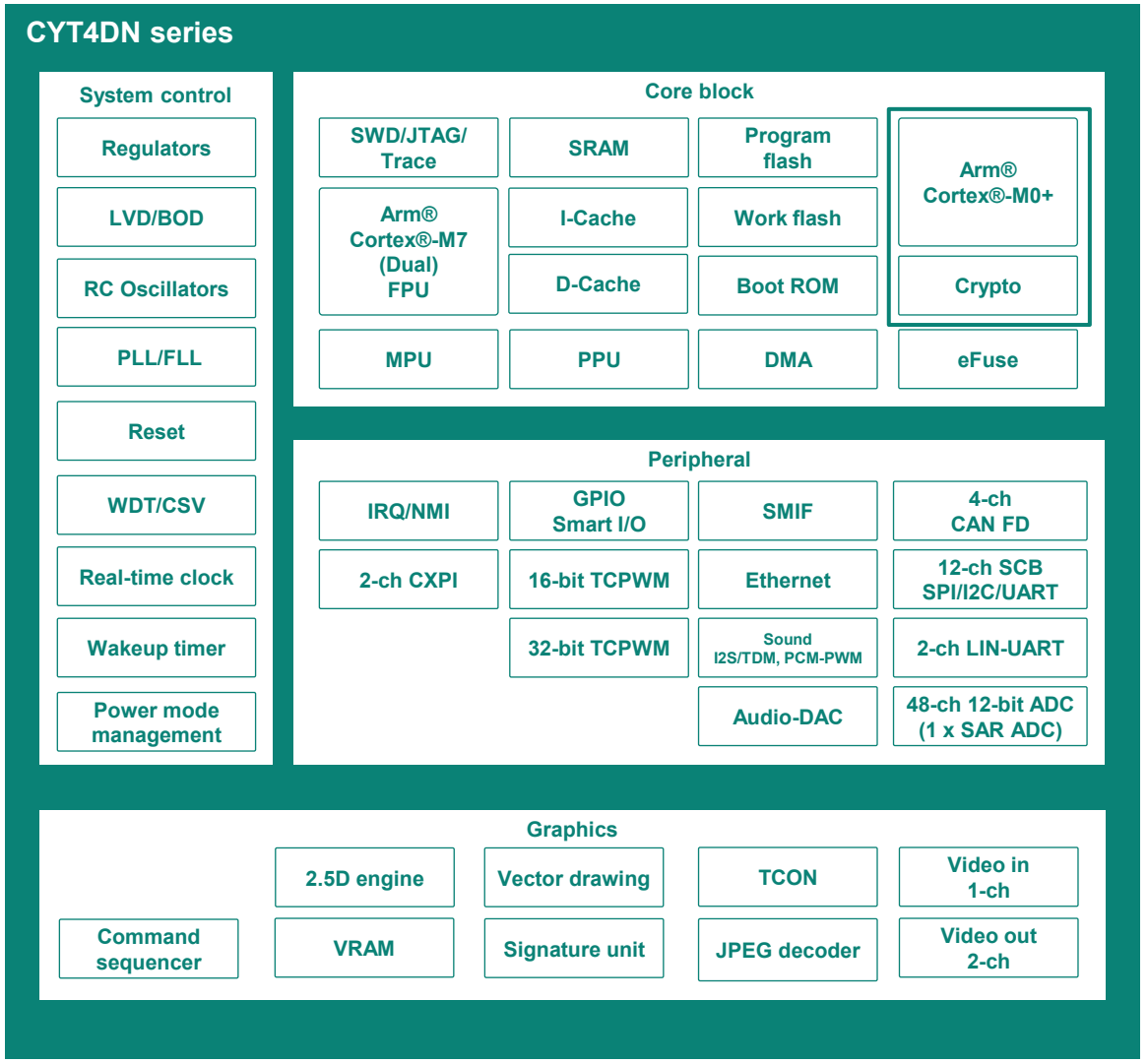
Collateral

Datasheet: CYT4DN series

Availability

Sampling: Now

Production: Now



CYT4EN series

TRAVEO™ T2G cluster MCU family (installed graphics engine)

Applications

Instrument cluster + HUD, Electronic mirrors

Features

- **32-bit MCU core systems**
  - 2x 320 MHz Arm® Cortex®-M7 and Cortex®-M0+
  - 6 MB flash, 640 KB RAM, and 128 KB work flash
- **1.15 V, 1.8 V, 3.3 V and 5.0 V supply voltages**
- **Interfaces**
  - Gigabit-Ethernet, 4 channel CAN FD, 12 channel SCB, and 2 channel LIN-UART
  - 2 channel SMIF: Single / Dual / Quad / Octal-SPI / HYPERBUS™
  - eMMC interface
- **Cluster features**
  - 4 channel SMC + ZPD
  - 2.5D engine, LPDDR4 interface, Vector drawing, JPEG decoder
  - Video-out: 2 channel (LVDS, RGB)/ Video-In: 1 channel (RGB, MIPI)
  - Sound module, I^2S/TDM, PCM-PWM and DAC
- **Packages**
  - 500-BGA
- **ISO 21434 compliant***

* Deliverable available in Q326

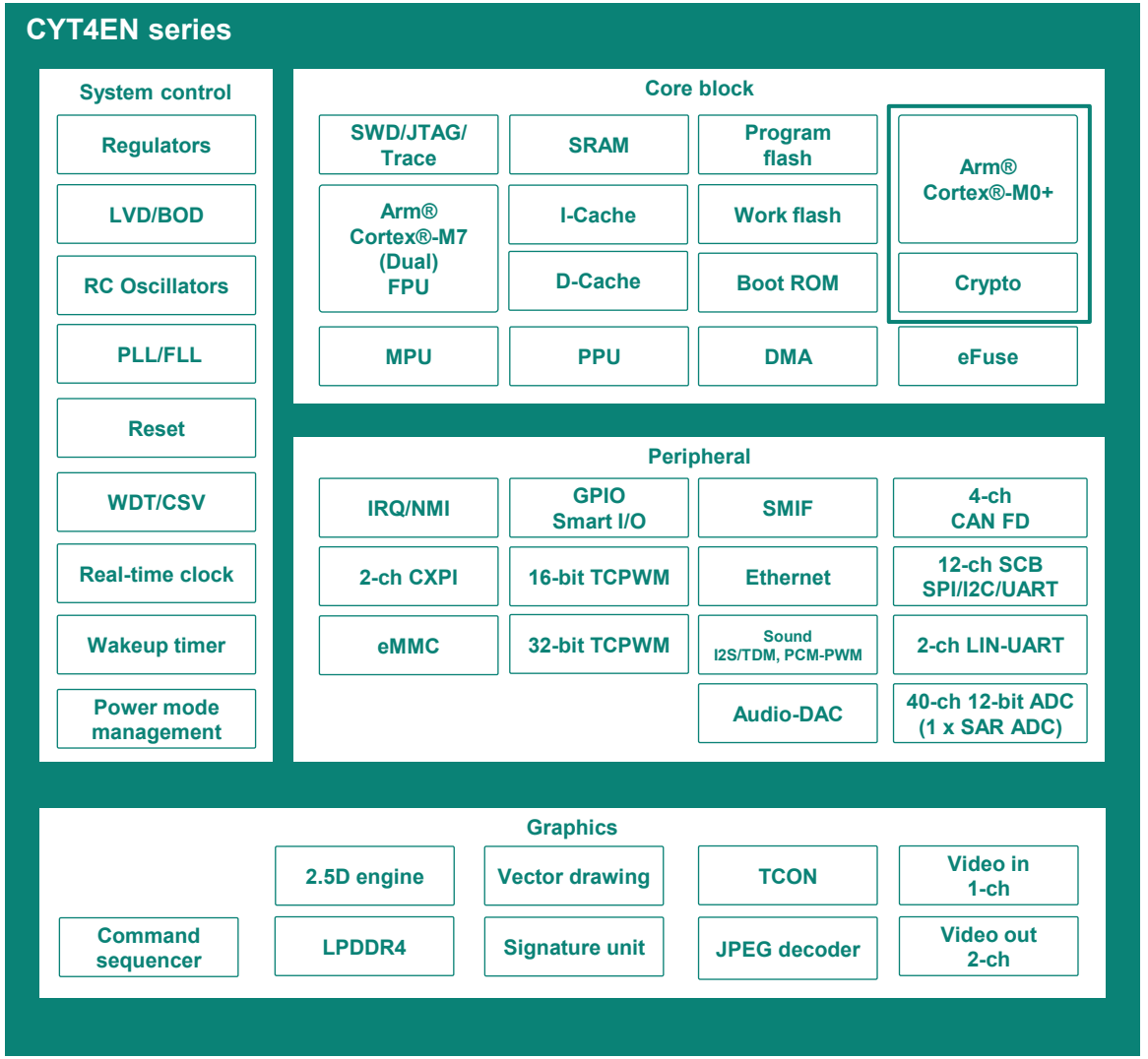
Collateral

Datasheet: Contact sales

Availability

Sampling: Now

Production: Contact sales




Infineon