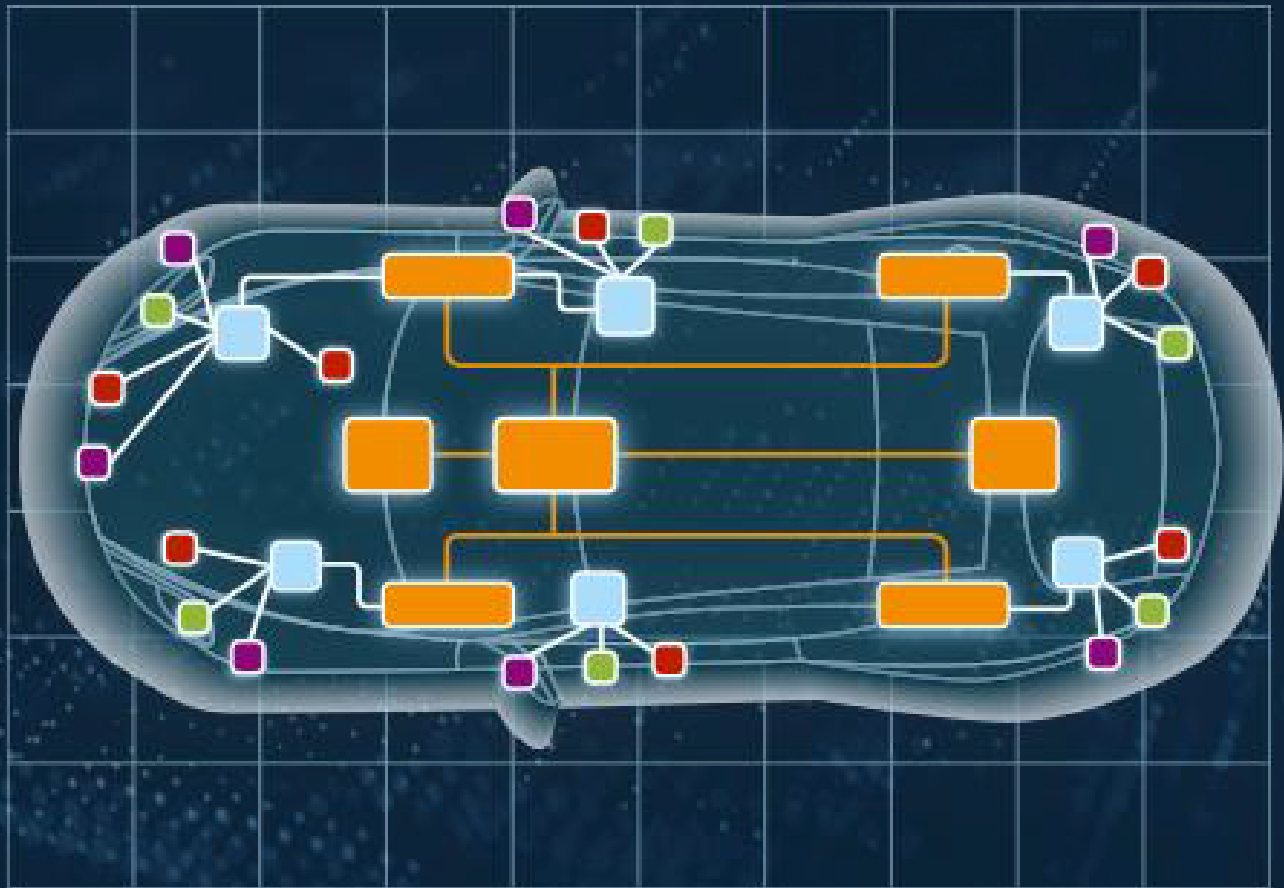


CONTROL UNIT HEADER GEN 2 (CH2)

TE's compact, mixed wire-to-board header solution

**More Performance
in Less Space -
Flexibility that Fits.**

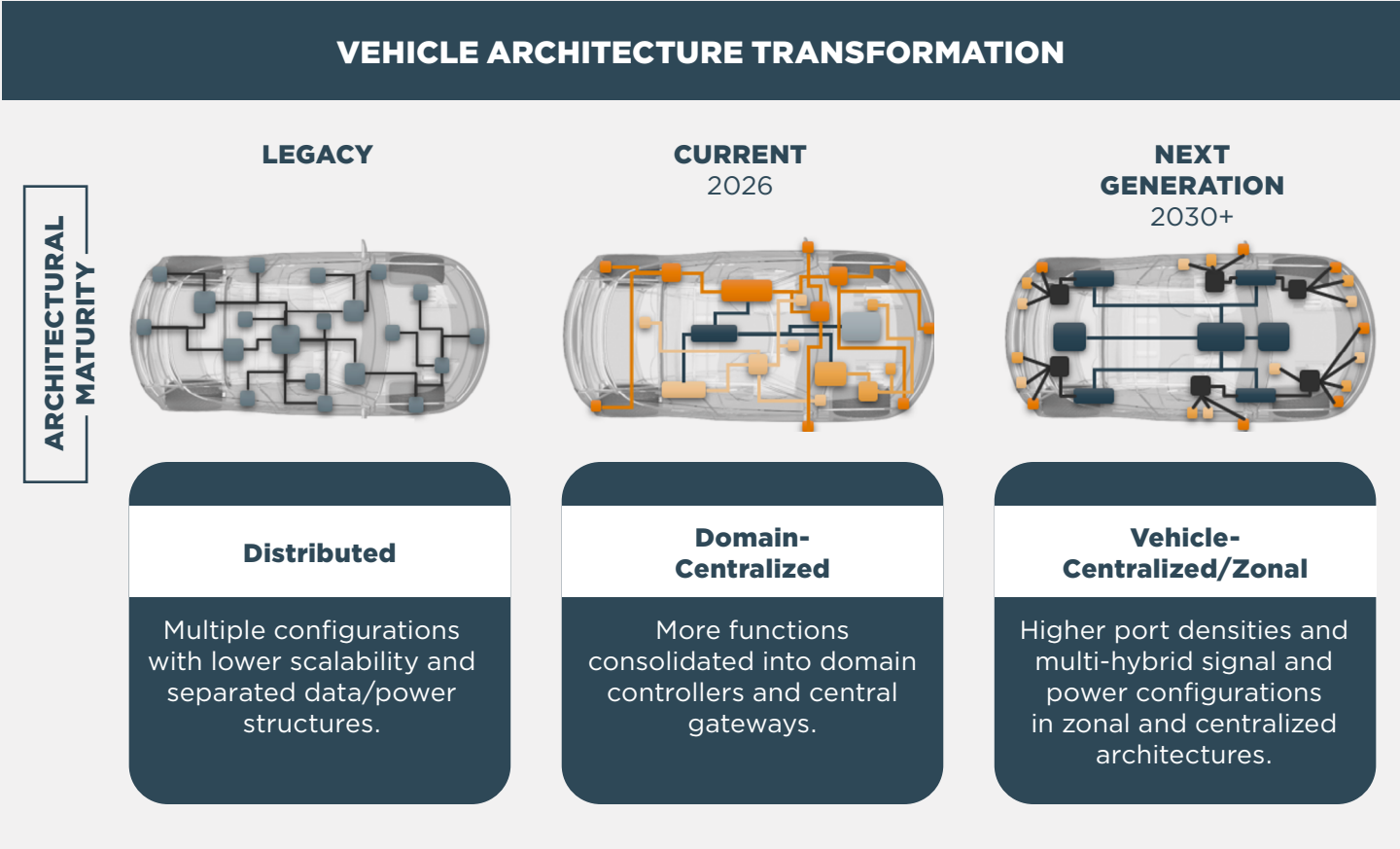


VEHICLE ARCHITECTURES ARE TRANSFORMING

As vehicle architectures become more centralized, zonal control units need to support more functionality within tighter packaging environments.

Modern electrical and electronic architectures are moving from distributed systems toward domain-centralized and vehicle-centralized/zonal architectures. As this shift continues, control units are expected to support increasing port density, mixed signal and power requirements, and greater functional integration within compact electronic enclosures.

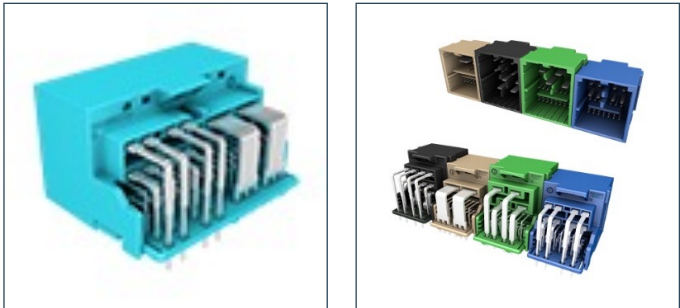
For design teams, this creates a clear connectivity challenge: more connections, more mixed electrical requirements, and more assembly considerations — all within limited PCB and module space.



As controller architectures evolve, connector systems need to become smaller, more flexible, and easier to integrate.

INTRODUCING - COMPACT MIXED WIRE-TO-BOARD CONNECTIVITY FOR CONTROL UNITS (CH2)

As vehicle architectures transition toward centralized, domain and zonal control systems, electronic control units are expected to deliver more functionality within increasingly compact packaging environments. Engineers must accommodate growing signal and power requirements, maximize PCB utilization and simplify increasingly complex controller designs—all while accelerating development and reducing costs.



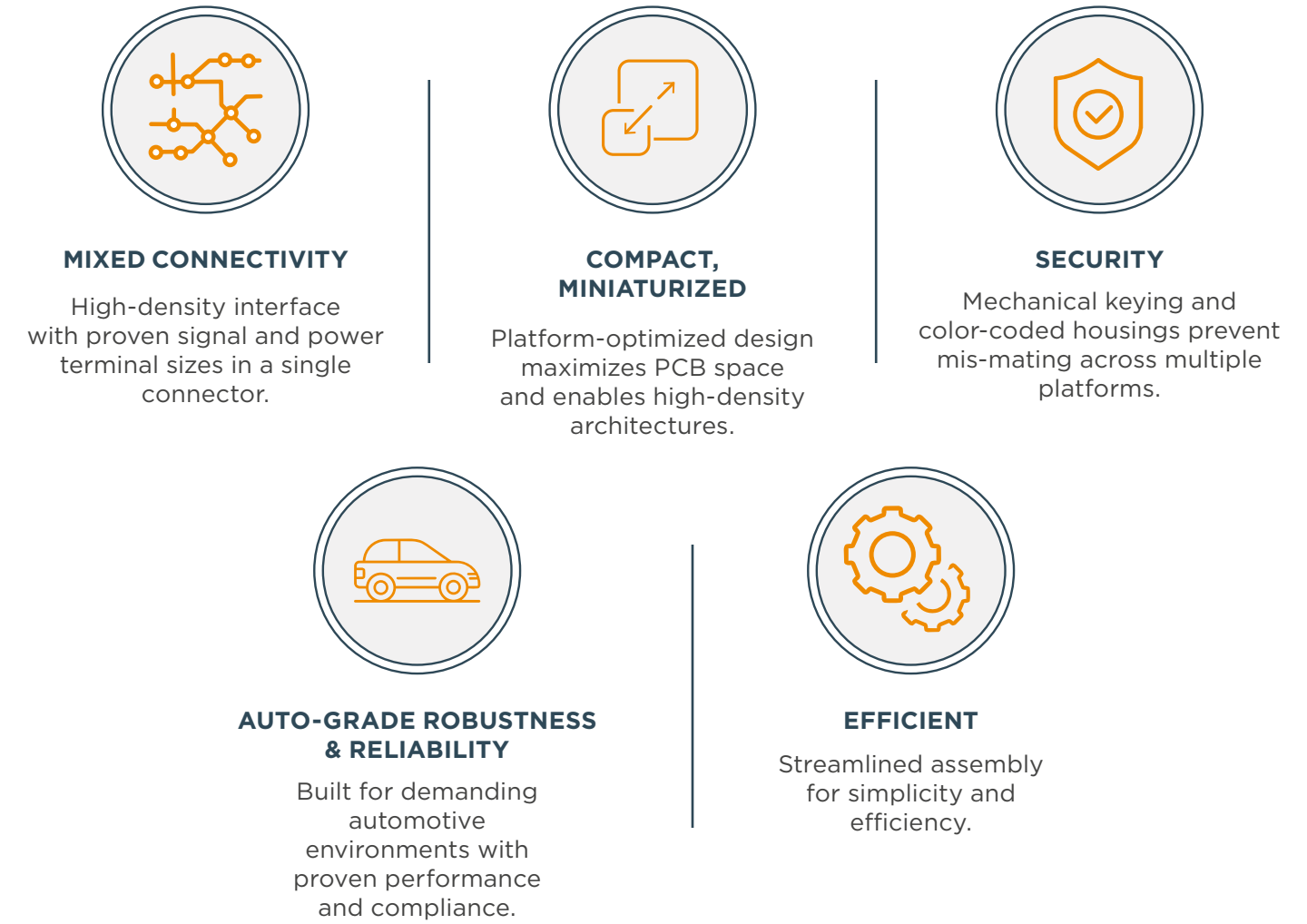
Traditional connector solutions often require multiple connector interfaces to support different signal and power requirements, increasing PCB complexity, connector count and assembly effort.

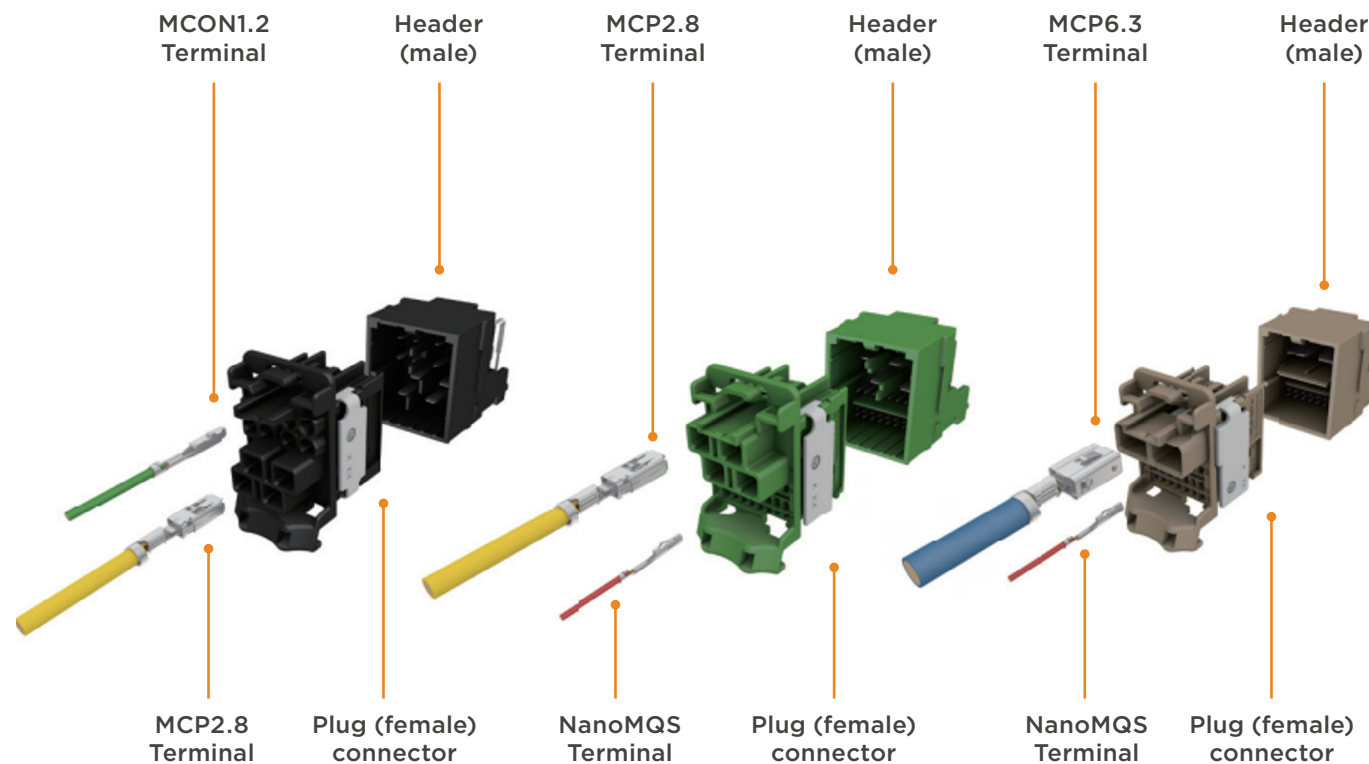
The CH2 was developed to address these challenges by combining the trusted NanoMQS 0.50 mm, MCON 1.2 mm, and AMP MCP 2.8/6.3 mm terminal technologies into one compact, space-efficient, horizontal (90°), stackable header design. Available in multiple mixed-pin configurations - including 12P, 23P, 28P, 29P, 52P, and 73P, the platform provides the flexibility to integrate signal and power connectivity within a single interface while supporting scalable ECU designs. With its compact footprint, modular architecture, and proven terminal technologies, CH2 helps customers maximize PCB space, simplify development, and confidently design for next-generation automotive electronics.



One Connector Platform. Four Proven Terminal Technologies.

CH2 integrates NanoMQS 0.50, MCON 1.2, AMP MCP 2.8 and AMP MCP 6.3 terminals into a single configurable connector interface, enabling engineers to support mixed signal and power requirements while reducing PCB complexity, simplifying assembly and maximizing design flexibility.





HOW CH2 SUPPORTS COMPACT ZONAL AND DOMAIN CONTROLLER DESIGNS

CH2 addresses the practical design pressures created by evolving vehicle architectures: limited PCB space, increasing functionality, mixed electrical requirements, scalable platform needs and assembly complexity.

Maximize PCB space

A compact, miniaturized and platform-optimized design helps support space-constrained controller layouts.

Combine signal and power in one interface

CH2 supports mixed terminal platforms, including NanoMQS 0.50, MCON 1.2, AMP MCP 2.8 and AMP MCP 6.3, giving engineers flexibility to tailor signal, low-power and medium power circuits in a single interface with greater versatility.

Scale across control-unit variants

Horizontal (90°) stackable header design with multiple mixed-pin configurations help support different application requirements across vehicle platforms. Configurations shown include 12P, 23P, 28P, 29P, 52P and 73P.

Support assembly accuracy

Mechanical keying features and color-coded housings help prevent plugging into the wrong port and support error-proof assembly across multiple positions.

Manufacturing ready

Supports Pin-in-Paste assembly and reflow soldering for efficient production.

High-current performance

Support applications from 6A to 52A across multiple wire sizes.

CH2 TECHNICAL ADVANTAGES



PERFORMANCE

- Suitable wire sizes:
 - 0.35 mm² max (NanoMQS 0.50)
 - 1.5 mm² max (MCON 1.2)
 - 2.5 mm² max (AMP MCP 2.8)
 - 6 mm² max (AMP MCP 6.3)
 - F-type terminal crimping technology
- Supports current levels from 6A up to 52A
- Vibration rating: USCAR-2 V1
- Duration: 20 times of insertion and extraction
- Insertion/extraction force: 75N max
- Compatible with reflow soldering (up to 260°C peak)



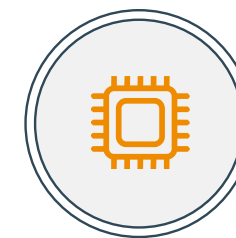
ROBUSTNESS & RELIABILITY

- Automotive grade robustness designed to USCAR and OEM requirements
- Mechanical keying features ensure error-proof assembly across multiple platforms
- RoHS compliant
- Product spec.108-160835
- Appl. spec. 114-160539
- Test reference standard: USCAR-2, LV214 (under validation)



SMART DESIGN

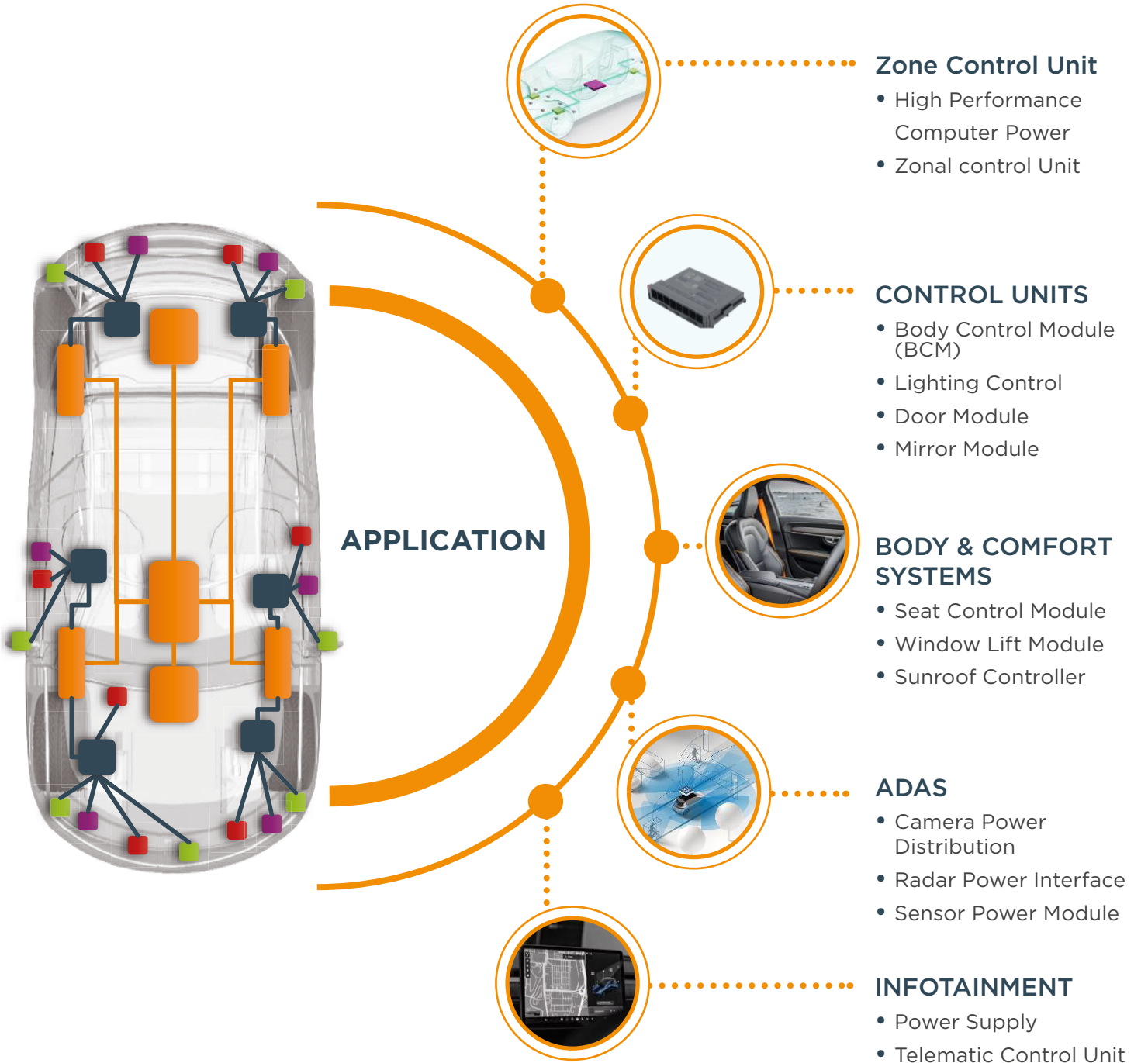
- Horizontal (90°) stackable header design
- Modules mechanically click/stack together
- Enables flexible pin-count scaling
Small and space-efficient footprint
- Multiple mixed-pin variants (12P, 23P, 28P, 29P, 52P and 73P)
- Simple and convenient assembly process
- Designed for PIP (Pin in Paste) process



ROBUSTNESS & RELIABILITY

- Tailored to modern domain-based E/E architectures
- Future-proofs connectivity in evolving automotive systems
- Supports increasing functional integration in vehicles

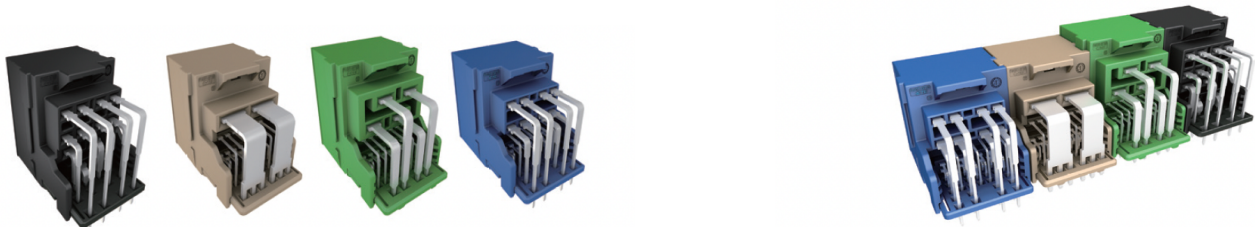
DESIGNED FOR MODERN ELECTRONIC CONTROL UNITS
CH2 is optimized for electronic control units requiring high connection density within compact packaging environments.



HEADER & PLUG (MALE & FEMALE) CONNECTOR

Standard header (male) connector - Single cavity schematics of 12P, 23P, 28P & 29P connectors

Schematic of splicing single cavity products (Splicing 2, 3, 4 or 5 connectors is supported)



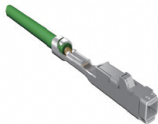
Pos.	Header Drawing No.	Header Picture	Degree	Coding	Soldering	Plating	Package	Plug Drawing No.	Plug Picture
12P	2418381 (4*2.8+8*1.2)		90°	4	PIP / Wave Soldering	Tin / Ag	Tray	2418400	
23P	2418382 (2*6.3+21*0.5)		90°	4	PIP / Wave Soldering	Tin / Ag	Tray	2418500	
28P	2418383 (4*2.8+24*0.5)		90°	6	PIP / Wave Soldering	Tin / Ag	Tray	2418600	
29P	2418384 (8*1.2+21*0.5)		90°	4	PIP / Wave Soldering	Tin / Ag	Tray	2418700	
52P	2318486 (23P+29P)		90°	2	PIP / Wave Soldering	Tin / Ag	Tray	2436800 2436900	
73P	2318486 (23P+29P)		90°	1	PIP / Wave Soldering	Tin	Tray	2188698 2188701	

TERMINALS

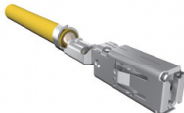
NanoMQS 0.50mm Terminal

Product Picture	Applicable Wire	Current Rating	Material / Finish	Drawing Number
	0.13-0.22mm²	3A Max.	Copper alloy / Tin	1703930

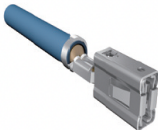
MCON 1.2mm Terminal

Product Picture	Applicable Wire	Current Rating	Material / Finish	Drawing Number
	0.35-1.5mm²	17A Max.	Tin/ Ag	1534326

AMP MCP 2.8mm Terminal

Product Picture	Applicable Wire	Current Rating	Material / Finish	Drawing Number
	0.35-4.0mm²	34A Max.	Tin/ Ag	1355036

AMP MCP 6.3mm Terminal

Product Picture	Applicable Wire	Current Rating	Material / Finish	Drawing Number
	0.5-6.0mm²	52A Max.	Tin/ Ag	1241438

MORE PERFORMANCE IN LESS SPACE. FLEXIBILITY THAT FITS.

CH2 combines four proven TE terminal platforms into one compact mixed wire-to-board connector system, helping OEMs and Tier 1 suppliers maximize PCB space, simplify controller design and support scalable vehicle architectures.

WWW.TE.COM/CH2

EVERY CONNECTION COUNTS



TE Connectivity plc (NYSE: TEL) is a global industrial technology leader creating a safer, sustainable, productive, and connected future. As a trusted innovation partner, our broad range of connectivity and sensor solutions enable the distribution of power, signal and data to advance next-generation transportation, energy networks, automated factories, data centers enabling artificial intelligence, and more.

Our more than 90,000 employees, including 10,000 engineers, work alongside customers in approximately 130 countries. In a world that is racing ahead, TE ensures that EVERY CONNECTION COUNTS. Learn more at www.te.com and on [LinkedIn](#), [Facebook](#), [WeChat](#) and [Instagram](#).

Connect With Us

We make it easy to connect with our experts and are ready to provide all the support you need. Visit **te.com/support** to chat with a Product Information Specialist.

TE.com/CH2

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