Intel® In-Vehicle Solutions Development Kit

Supporting the portfolio of Intel® In-Vehicle Solutions, the kit includes a chassis and development tools needed to quickly bring up IVI systems.

Product Highlights

- High-Performance Compute Module (Intel® In-Vehicle Solution CM1050)
- Hardened and Optimized Automotive Middleware (Intel® In-Vehicle Solution Software Foundation)
- Chassis with Thermal Solution
- EMI Suppression
- Six Types of Antennas
- RoHS and REACH* Compliant
- Development Tools
- Included Peripherals:
- Power Brick
- HD Touch Screen
- Cabling
- Blu-ray* Drive
- Intel® Solid-State Drives (Intel® SSD)
- CAN Box
- Antennas

Product Overview

Intel® In-Vehicle Solutions Development Kit is an application-ready, in-vehicle infotainment (IVI) solution, complete with chassis and development tools to quickly get applications running. The basis for the development kit is the Intel® In-Vehicle Solutions Compute Module and Software Foundation, which integrates automotive middleware software and a purpose-built IVI computing module, sparing system developers from having to design and integrate these components themselves. This exceptional level of integration greatly simplifies IVI system design, enabling in-vehicle testing of IVI features soon after application software is loaded.

Application-Ready IVI Platform

Intel In-Vehicle Solutions are designed and optimized specifically to help automakers more quickly and cost-effectively deliver innovative IVI solutions across their entire automotive portfolio. The solution set supports dozens of essential features, entertainment packages, and connectivity options though a comprehensive middleware and high-performance compute module:

- Compute modules: Providing a fully-validated, automotive-grade design, Intel In-Vehicle Solutions Compute Modules support a full complement of IVI features.
- Software foundation: Delivering a comprehensive middleware package, the Intel In-Vehicle Solutions Software Foundation is optimized and pre-validated to speed up development time, compared to traditional solutions.

For more information about the Intel In-Vehicle Solutions, download the product brief.

Chassis

Enclosed in a chassis, the development kit can be powered by a 12 V battery, making it ready for the test track. The chassis houses an assortment of antennas and I/O interfaces for connecting to IVI peripherals and automotive busses, as illustrated in Figure 1. The chassis incorporates an optimized thermal solution based on extensive thermal analysis (Figure 2) of the compute module. The development kit also includes a high-definition display.

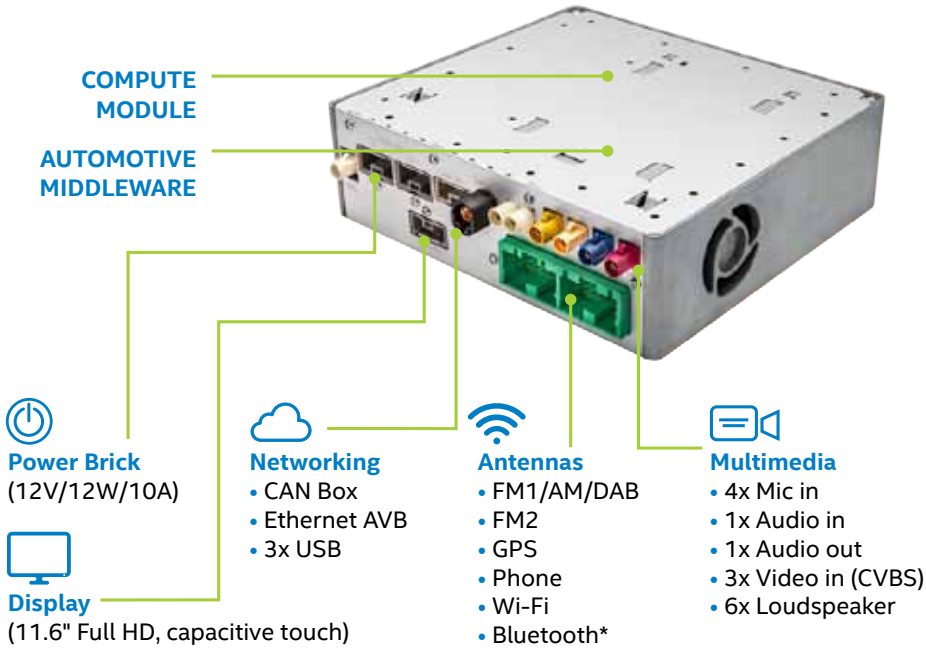


Figure 1. Development Kit Components.

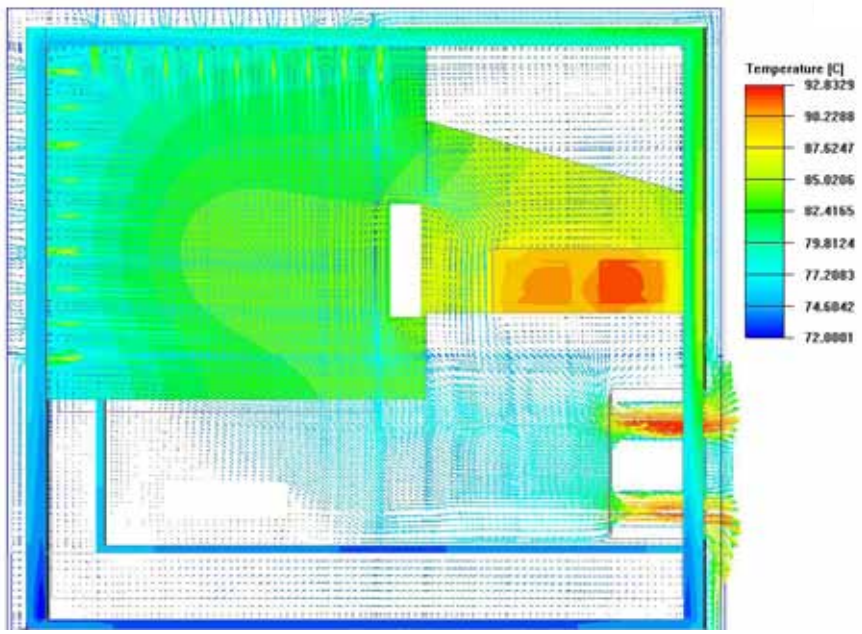
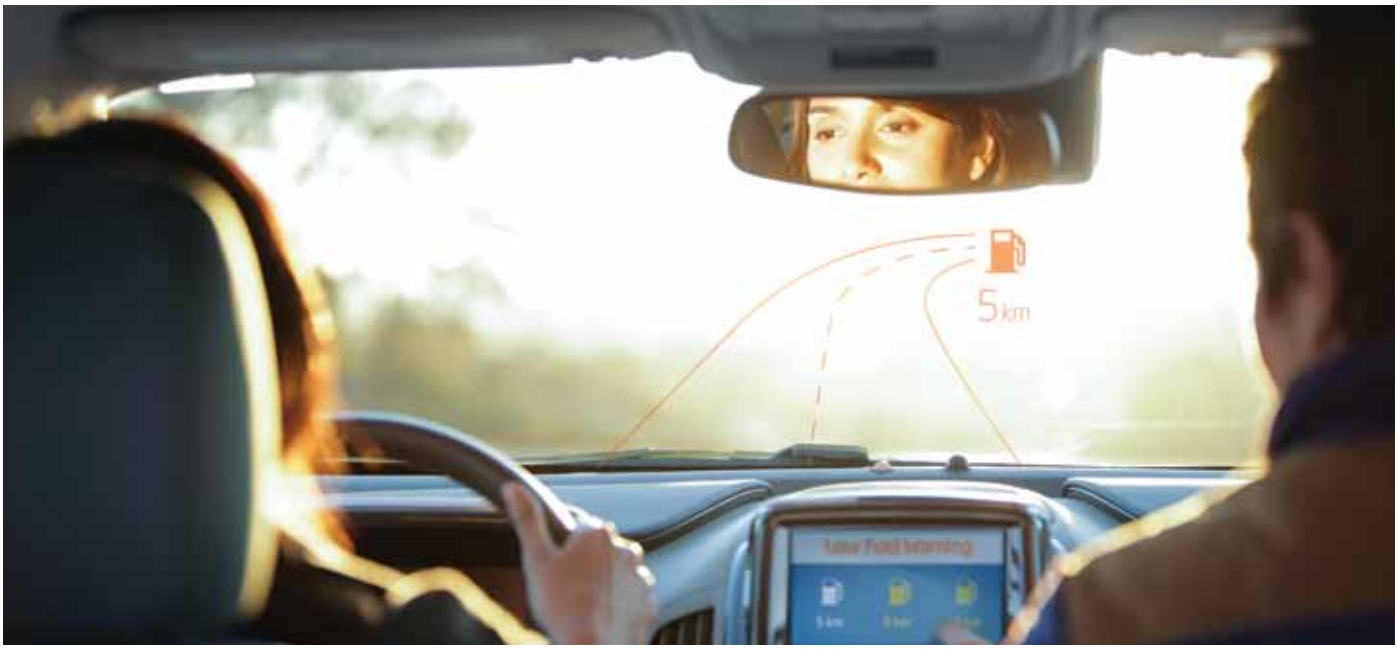


Figure 2. Thermal Analysis.



Development Tools

Helping system developers get their IVI applications up and running, the Intel In-Vehicle Solutions Development Kit includes the following development tools:

CBC Configurator Toolchain: The carrier board communication (CBC) Tool Chain tutorial describes the process for configuring Eclipse* for the CBC Tool Chain and building a CBC plug-in for the compute module by importing a Vector*.dbc file. It also explains the steps to generate matching input/output controller (IOC) code and how to integrate it into the IOC firmware.

GENIVI* Diagnostic Log and Trace Viewer Plug-in: The development kit provides a plug-in for the GENIVI Diagnostic Log and Trace (DLT) Viewer used to trace, analyze, and debug ultrafast, inter-process communication (UF-IPC) messages between components on the target. The UF-IPC is the API layer for interfacing the software foundation to each subsystem.

Eclipse* IDE Plug-in for Audio: Audio configuration is done using a domain specific language (DSL) defined for the audio subsystem. The tool supports the following features:

- Text-based configuration of the audio subsystem
- Syntax coloring
- Syntax checking
- Validation of audio configuration checks for consistency
- Problem markers to easily find configuration errors
- Code generation using a single configuration file to generate several output files

Eclipse IDE Plug-in for IDL Programming: The IDL files that describe the software foundation (i.e., middleware) subsystem APIs can be accessed via an Intel-supplied IDL Editor, distributed as an Eclipse plug-in. The IDL editor allows developers to create new IDL files needed for their own components, and enables easy use of the Intel middleware and UF-IPC between subsystems.

Line Diagnosis and Analysis (LinDA): This tool provides an independent test framework that can be used to support hardware testing, automotive platform development, production, debugging, benchmarking, and certification.

Sample Applications: In addition to custom tools to aid development, there is a suite of sample applications to demonstrate technologies included in the package. The applications currently cover multimedia, CBC tutorial, client/server UF-IPC, and LinDA.

Faster IVI Development than Traditional Solutions

The Intel In-Vehicle Solutions Development Kit provides IVI system developers with an application-ready platform supported by a uniquely-comprehensive set of automotive middleware that is already running on a purpose-built IVI computing module. Breaking new ground, the development kit puts a near production-ready design in the hands of developers, potentially shaving months off schedules and freeing up valuable time to focus on creating compelling user experiences.

For more information about Intel in-vehicle technologies, visit www.intel.com/content/www/us/en/intelligent-systems/automotive/automotive-overview.html

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