



AutoDevKit

an Integrated Development
Environment for automotive &
transportation applications

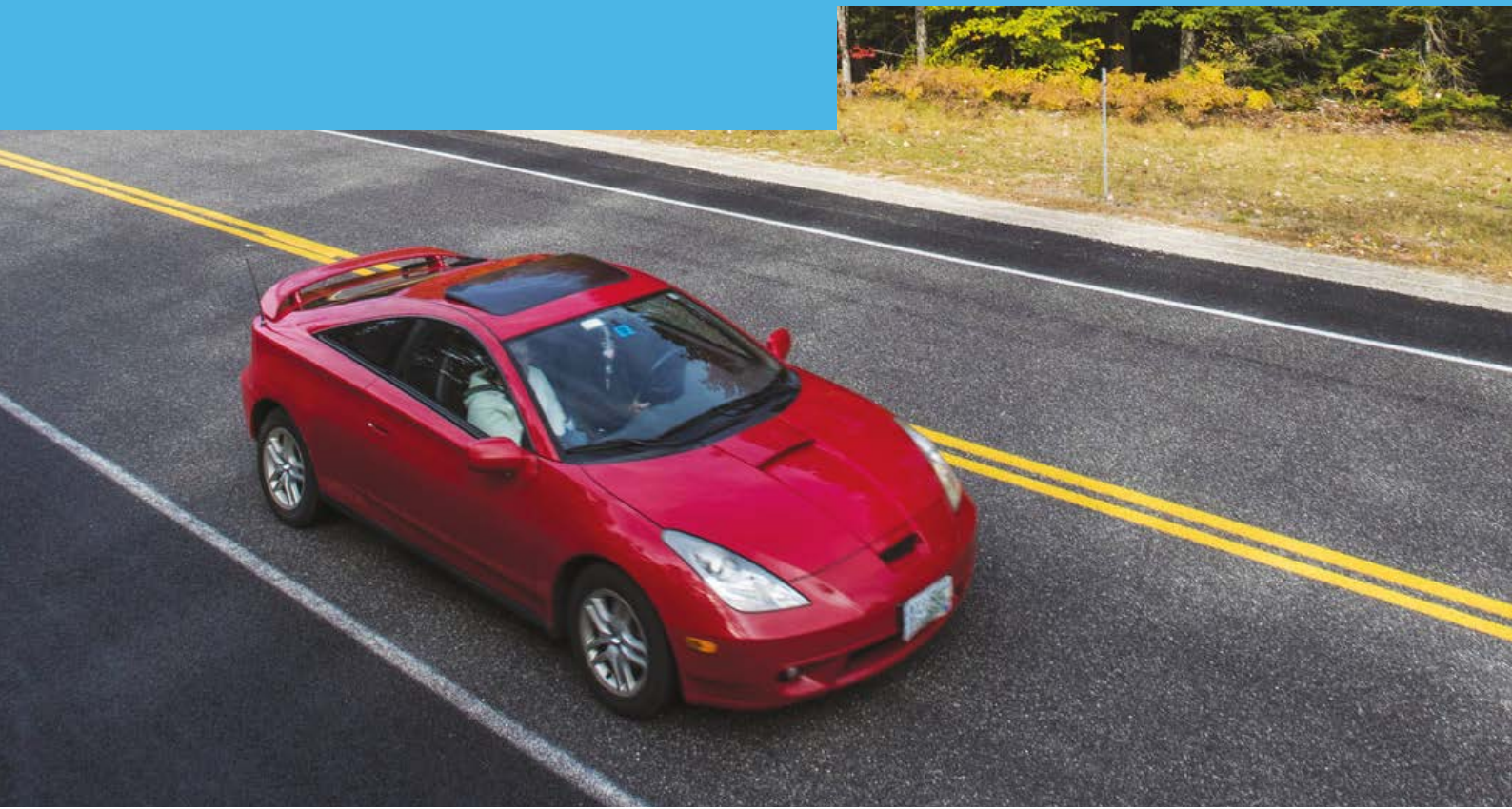
2026 Edition



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AutoDevKit overview



A practical, simple, and low-cost development initiative for automotive application engineers

A new development flow and ecosystem tailored for the Automotive & Transportation market, this innovative platform delivers engineers the best and easiest way for quick evaluation and rapid prototyping within a common, integrated and flexible environment.

The ecosystem accelerates prototype development, enabling rapid iteration and innovation. With a unified and cohesive platform, engineers can work more efficiently, while the system's flexibility adapts to specific project needs.

KEY FEATURES

- Focus on developing your application without worrying about hardware and software details.
- Assemble and reassemble components without compatibility issues.
- Expand and customize your application by adding components, optimizing costs, changing compilers, and integrating real-time OS and Eclipse-compatible plugins.

AutoDevKit Ecosystem

User-friendly MCU
discovery and
function boards

Ready-to-use system
solution
demonstrators



Pre-built embedded software
with example code

AutoDevKit

Software environment



AutoDevKit ecosystem includes a complete set of software and firmware components to develop your application prototype.

Thanks to its user-friendly graphical interface, AutoDevKit Studio ([STSW-AUTODEVKIT](#)) can be used either at high level with easy-to-use methods or at very low-level board/chip through advanced functions and features.

The AutoDevkit ecosystem also comes with an extensive collection of demo and application code so you can reduce your design cycle and quickly start using the board. Easily integrated into SPC5-Studio and AutoDevKit Studio IDEs.



SPC5-Studio development environment for SPC5 MCUs

SPC5-Studio is a free Eclipse integrated development environment that has been designed specifically for SPC5 automotive MCUs. It includes everything you need to graphically design and compile your SPC5 automotive application:

- Integrates an optimized GNU 'C' compiler by HighTec on a 30-day full-featured trial license
- Works with a growing library of low-level drivers



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Developer community

STMicroelectronics is dedicated to providing comprehensive educational materials and support for engineers, developers, and technology enthusiasts. Here, you will find a wealth of information designed to help you deepen your understanding of STMicroelectronics products and technologies.

Learning @ ST



Visit the ST community pages.

Looking for solutions and tips to overcome your design challenges? Join discussions, ask questions, and share insights with other community members as well as our technical staff. You can also follow online courses to increase your skills.

<https://community.st.com/>

With dedicated product forums and knowledge base, developers can quickly access and search for the most relevant information and solutions for their projects.



Visit the [AutoDevKit ecosystem community page](#)



Subscribe to our Automotive newsletter for the latest news about our most recent products, solutions and development tools.

Automotive function boards

Part number	Application	Description	Page
<u>AEK-AUD-C1D9031</u>	Audio	Very compact vehicle warning sound (AVAS) evaluation board	<u>8</u>
<u>AEK-AUD-D903V1</u>	Audio	45 W Class-D audio amplifier evaluation board	<u>8</u>
<u>AEK-COM-ISOSPI1</u>	Communication	Configurable dongle that converts SPI signals into isolated SPI signals	<u>9</u>
<u>AEK-COM-10BASET</u>	Communication	10BASE-T1S MAC-PHY evaluation board to connect different protocols of a car zone to the automotive Ethernet protocol	<u>9</u>
<u>AEK-CON-C1D9031</u>	Connector	AVAS connector board used to bridge the AEK-AUD-D903V1 and the AEK-MCU-C1MLIT1 boards	<u>10</u>
<u>AEK-LCD-DT028V1</u>	Mini-infotainment	2.8" LCD touchscreen expansion board for a graphical user interface (GUI)	<u>11</u>
<u>AEK-LED-21DISM1</u>	Lighting	Flexible LED driver board for high-brightness LED front lighting applications	<u>11</u>
<u>AEK-MOT-2DC40Y1</u>	Motor Control	Dual DC motor driver board for highly compact motor control solutions	<u>12</u>
<u>AEK-MOT-3P99081</u>	Motor Control	CAN-controlled BLDC motor evaluation board	<u>12</u>
<u>AEK-MOT-MR200G1</u>	Motor Control	Vehicle mirror controller board (folding, unfolding, X-Y inclination, dimming, and defrosting)	<u>13</u>
<u>AEK-MOT-SM81M1</u>	Motor Control	Programmable stepper motor driver evaluation board	<u>13</u>
<u>AEK-MOT-TK200G1</u>	Motor Control	Power liftgate controller board able to drive up to three DC motors	<u>14</u>
<u>AEK-MOT-WINH92</u>	Motor Control	Window lift DC motor driver board with anti-pinch mechanism	<u>15</u>
<u>AEK-POW-BMSCC</u>	Smart Power	Optimized form-factor and packaged BMS module based on L9963E	<u>16</u>
<u>AEK-POW-BMSCCTX</u>	Smart Power	Optimized form-factor and packaged BMS module based on L9963E and L9963T	<u>16</u>
<u>AEK-POW-BMSNOTX</u>	Smart Power	Non-isolated battery management (BMS) node dedicated to auxiliary battery packs	<u>17</u>
<u>AEK-POW-BMSWTX</u>	Smart Power	Battery management (BMS) evaluation board ensuring an isolated connection to an external MCU	<u>18</u>
<u>AEK-POW-LDOV01S</u>	Smart Power	Linear voltage regulator evaluation board with configurable output voltage	<u>19</u>
<u>AEK-POW-LDOV02J</u>	Smart Power	Linear voltage regulator evaluation board with configurable output voltage and advanced diagnostics	<u>19</u>
<u>AEK-POW-LDOV02X</u>	Smart Power	Automotive-grade dual LDO evaluation board with configurable output voltage and advanced diagnostics	<u>20</u>
<u>AEK-POW-PDUMINI</u>	Smart Power	12 V power distribution unit (PDU) board with 10 channels and superb standby performance	<u>20</u>
<u>STEVAL-PDUBV1</u>	Smart Power	26-channel power distribution ECU based on SPC58NG84E7 Chorus 6M MCU and STiFuse devices	<u>21</u>
<u>AEK-POW-SPSB081</u>	Smart Power	Automotive power management evaluation board with enhanced functions	<u>22</u>

The **AutoDevkit Studio** comes with an extensive collection of demo and application code so you can reduce your design cycle and quickly start using the board.

MCU Discovery boards

Part number	Description	Page
<u>AEK-MCU-C1MLIT1</u>	Full-featured 1-Mbyte SPC58 MCU discovery board	<u>23</u>
<u>AEK-MCU-C4MINI1</u>	All-in-one, fast-prototyping, user-friendly motor control evaluation board based on a 1-Mbyte SPC58 automotive MCU	<u>23</u>
<u>AEK-MCU-C4MLIT3</u>	Cost-optimized and compact size 4-Mbyte SPC58EC Discovery kit with CAN-FD and unified automotive connector	<u>24</u>
<u>AEK-MCU-SPC5LNK</u>	Programmer and debugger dongle for SPC5 automotive microcontrollers	<u>25</u>
<u>AEK-MCU-SRLNK</u>	Programmer and debugger for Stellar automotive microcontrollers	<u>25</u>
<u>SPC582B-DIS</u>	Low-cost 1-Mbyte SPC582B Discovery kit	<u>26</u>
<u>SPC58EC-DISP</u>	Flexible 4-Mbyte SPC58EC Discovery kit	<u>26</u>
<u>SPC584B-DIS</u>	Low-cost 2-Mbyte SPC584B Discovery kit	<u>27</u>
<u>SPC584B-DISP</u>	Flexible 2-Mbyte SPC584B Discovery kit	<u>27</u>

Industrial function boards

Part number	Application	Description	Page
<u>AEK-SNS-2TOFM1</u>	Sensors	Predefined gesture detection system based on time-of-flight (ToF) ranging sensors	<u>28</u>

Demonstrators

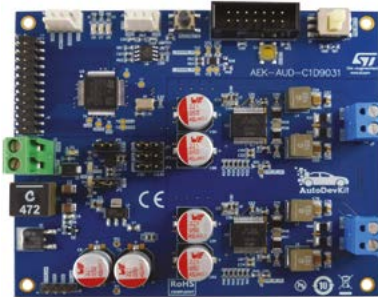
Part number	Description	Page
<u>AEKD-BLINDSPOTA1</u>	Blind-spot detection simulation kit	<u>29</u>
<u>AEKD-BLINDSPOTB1</u>	Set of assembled boards for blind-spot detection simulation	<u>29</u>

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Automotive function boards

AEK-AUD-C1D9031

Very compact vehicle warning sound (AVAS) evaluation board



BOARD FEATURES

- Two integrated audio amplifiers for stereo mode or two separate audio channels
- Compact design to strategically place different modules around the vehicle
- All modules can be controlled by a central MCU via CAN interface

Key products

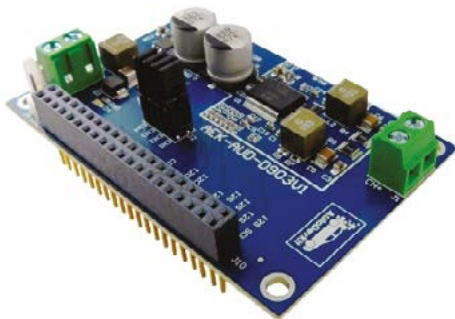
- [FDA903D](#) 45 W Class-D audio amplifier
- [SPC582B60E1](#) 1-Mbyte automotive MCU

AutoDevKit Studio example code

- Simulate car engine sounds with real-time diagnostics [SPC582Bxx_RLA_AEK_AUD_C1D9031]

AEK-AUD-D903V1

45 W Class-D audio amplifier evaluation board



BOARD FEATURES

- Designed for use with the AEK-MCU-C1MLIT1 Discovery board
- FDA903D controlled via I²C and I²S interfaces and GPIOs

Additional resources

- Full-featured 4-Mbyte SPC58 MCU discovery board ([AEK-MCU-C1MLIT1](#))
- AVAS connector board used to bridge the AEK-AUD-D903V1 and the AEK-MCU-C1MLIT1 boards ([AEK-CON-C1D9031](#))

Key product

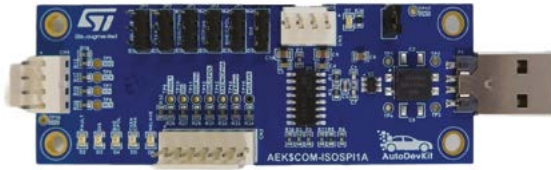
- [FDA903D](#) 45 W Class-D audio amplifier in a PowerSSO-36 slug-down package

AutoDevKit Studio example code

- Reproduce a sound using a mono WAV file with complete diagnostics [SPC582Bxx_RLA_AEK_AUD_D903V1 - Mono audio and Diagnostic - Test Application]

AEK-COM-ISOSPI1

Configurable dongle that converts SPI signals into isolated SPI signals



BOARD FEATURES

- Converts standard SPI signals to/from isolated SPI signals with a high level of noise immunity
- Native compatibility with the L9963E isolated SPI port

Key products

- [L9963T](#) SPI to isolated SPI bi-directional transceiver
- [USBLC6-2SC6Y](#) Automotive ESD protection device

Additional resource

- Flexible LED driver board ([AEK-LED-21DISM1](#))

AutoDevKit Studio example codes

- To drive the AEK-LED-21DISM1 Flexible LED driver board with an ISOSPI communication [SPC58EC - ISOSPI1_LEDdriver]
- Configures the registers in the AEK-LED-21DISM1 Flexible LED driver board [SPC582B - ISOSPI1_LEDdriver]

AEK-COM-10BASET

10BASE-T1S MAC-PHY evaluation board to connect different protocols of a car zone to the automotive Ethernet protocol



BOARD FEATURES

- For automotive zonal architecture implementations
- Manages different protocols: 10BASE-T1S, CAN, CAN-FD, and SPI
- It can be used as a gateway, converting a 10BASE-T protocol signal to other protocol signals used in a car zone subsystem

Key products

- [SPC58EC80EC](#) 4-Mbyte Automotive MCU
- [L5963DN-EHT](#) dual switching regulator
- [SPSB0813](#) PMIC with LIN and CAN-FD

AutoDevKit Studio example code

- Sends a message and performs a protocol conversion from CAN to Ethernet and vice-versa [SPC58ECxx_RLA AEK-COM-10BASET CAN-ETH Gateway]

AEK-CON-C1D9031

AVAS connector board used to bridge AEK-AUD-D903V1 and AEK-MCU-C1MLIT1 boards



BOARD FEATURE

- Includes a connector with two sliders: one to manage the speed (engine rpm) and the other for the volume

Key product

- [L9616](#) High-speed CAN transceiver

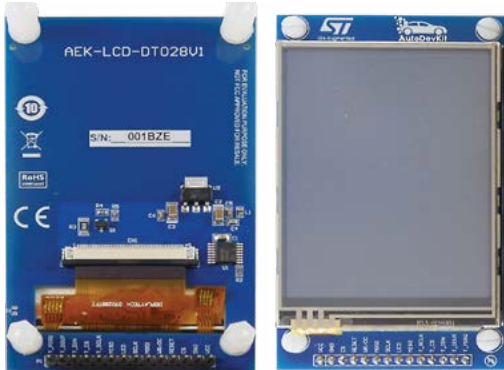
Additional resources

- Full-featured 1-Mbyte SPC58 MCU discovery board ([AEK-MCU-C1MLIT1](#))
- 45 W Class-D audio amplifier evaluation board ([AEK-AUD-D903V1](#))



AEK-LCD-DT028V1

2.8" LCD touchscreen expansion board for a graphical user interface



BOARD FEATURES

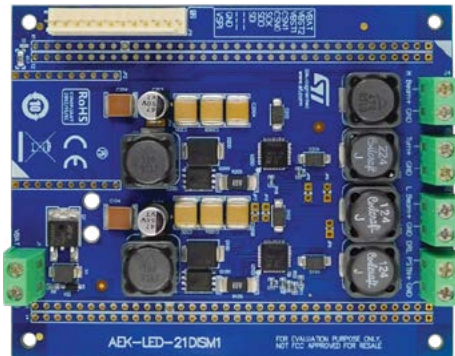
- 240 x 320 pixel resolution
- Designed for SPC58 MCU discovery boards

AutoDevKit Studio example code

- Calibration and identification of XY coordinates on the touchscreen when tapped [AEK-MCU-C4MINI_ AEK-LCD-DT028V1 – LCD Touch - Test Application]

AEK-LED-21DISM1

Flexible LED driver board for high-brightness LED front lighting applications



BOARD FEATURES

- Able to control four LED strings
- Watchdog and limp home functions
- Very accurate LED current setting

Additional resource

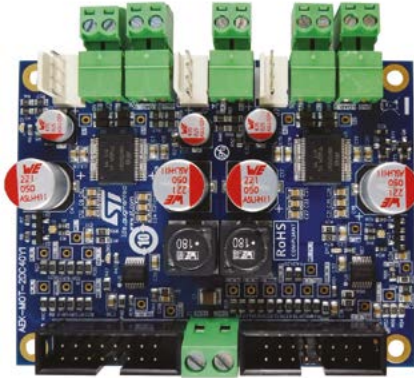
- Set of assembled boards for blind-spot detection simulation kit ([AEKD-BLINDSPOTB1](#))

AutoDevKit Studio example code

- Test application for controlling the LED drivers [SPC58ECxx_RLA AEK-LED-21DISM1]

AEK-MOT-2DC40Y1

Dual DC motor driver board for highly compact motor control solutions



BOARD FEATURES

- Very compact solution
- Embeds all driver and signal decoding functions
- Three independent encoder inputs

Key products

- **VNH7040AY** automotive-grade multiple DC motor driver up to 35 A

Additional products

- **VN7E010AJ** High-side driver with MultiSense analog feedback and improved high-precision current sensing
- **VN7050AJ** High-side driver with MultiSense analog feedback

AutoDevKit Studio example codes

- Test application for setting the motor rotation speed [SPC58ECxx_RLA AEK_MOT_2DCxxx Test application for Discovery]
- Test application for a feedback-based control loop mechanism [SPC58ECxx_RLA AEK_MOT_2DCxxx Proportional Integrative Derivative Test Application for Discovery]
- Test application driving two motors, one in clockwise and counterclockwise direction, the other in ON/OFF switch mode [AEK-MCU-C4MINI – AEK_MOT_2DC with AEK Dashboard]

AEK-MOT-3P99081

CAN-controlled BLDC motor evaluation board



BOARD FEATURES

- The firmware allows to drive the board from an external controller via CAN
- Wide range of system compatibility (12, 24, and 48 V)
- Smart logic for current acquisition and processing

Key products

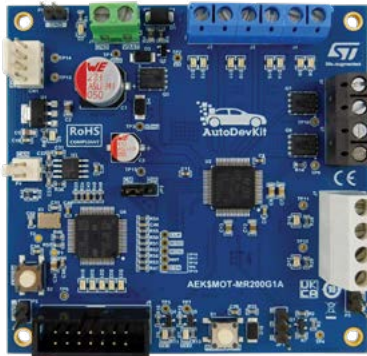
- **L9908** 3-phase motor gate driver unit
- **SPC560P** 32-bit Power Architecture MCU

Additional products

- **STD105N10F7AG** 80 A N-channel STripFET F7 Power MOSFET
- **LD1117** Adjustable, fixed low dropout voltage regulator
- **L7987L** 61 V, 2 A asynchronous step-down switching regulator with adjustable current limitation
- **L4995** 5 V low dropout voltage regulator

AEK-MOT-MR200G1

Vehicle mirror controller board



BOARD FEATURES

- Folding, unfolding, X-Y inclination, dimming, and defrosting
- Dedicated connectors for external encoders to detect the effective position of the side mirror for safety features or specific user profiles
- Able to drive two LED strings for turning signals or puddle lights

Key products

- **L99DZ200G** Multi-output driver with LIN and HS-CAN
- **SPC582B60E1** 1-Mbyte automotive MCU

Additional products

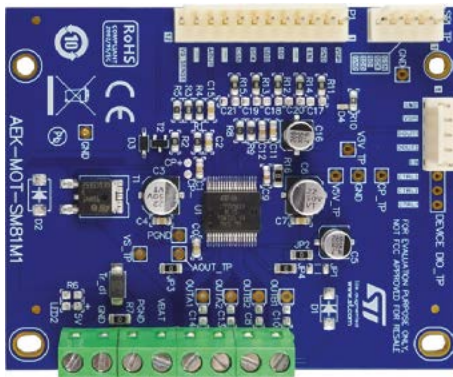
- **STL64N4F7AG** - Automotive-grade N-channel 40 V, 7.0 mOhm typ., 4 A STripFET F7 Power MOSFET in a PowerFLAT 5x6 package
- **STL19N3LLH6AG** - Automotive-grade N-channel 30 V, 25 mOhm typ, 10 A STripFET H6 Power MOSFET in a PowerFLAT 5x6 package
- **LD1117** - Adjustable and fixed low drop positive voltage regulator

AutoDevKit Studio example codes

- Ready-to-use demo that enables doorzone functions and features [SPC582Bxx_RLA_AEK-MOT-MR200G1_Doorzone]
- Test application used to allow an external MCU board to drive via CAN the AEK-MOT-MR200G1 [SPC58ECxx_RLA_4M_CAN_cmd_sender_for_MR200G]

AEK-MOT-SM81M1

Programmable stepper motor driver evaluation board



BOARD FEATURES

- Full set of I/Os for MCU control and feedback signaling
- Coil voltage monitoring for stall detection
- Reverse battery protection

Key product

- **L99SM81V** Programmable stepper motor driver with micro-stepping and stall detection

Additional products

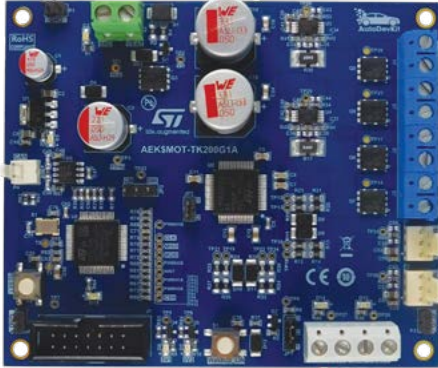
- **STPS3L40** 40 V, 3 A SMD power Schottky rectifier
- **STPS0540ZY** 40 V, 0.5 A power Schottky rectifier
- **SMAJ40CA-TR** 400 W, 40 V transient voltage suppressor
- **STD95N4F3** N-channel 40 V, 80 A, STripFET Power MOSFET

AutoDevKit Studio example code

- Test application with basic left and right rotation [SPC58ECxx_RLA_AEK_MOT_SM81M1]

AEK-MOT-TK200G1

Power liftgate controller board able to drive up to three DC motors



BOARD FEATURES

- Additional high-side outputs to drive bulbs, relays, and LEDs
- CAN bus interface for remote control
- Thermal warning and thermal shutdown protection

Additional products

- **SM6T36CAY** 600 W, 30.8 V transient voltage suppressor
- **STTH3R02-Y** 200 V, 3 A ultrafast diode
- **STL64N4F7AG** N-channel 40 V 4 A STripFET F7 Power MOSFET
- **STL260N4F7** N-channel 40 V 120 A STripFET F7 Power MOSFET
- **STL76DN4LF7AG** N-channel 40 V, 40 A STripFET F7 Power MOSFET
- **LD1117** Adjustable, fixed low dropout voltage regulator
- **TSC103IYPT** High-voltage, high-side current sense amplifier

Key products

- **L99DZ200G** Multi-output driver with LIN and HS-CAN
- **SPC582B60E1** 1-Mbyte automotive MCU

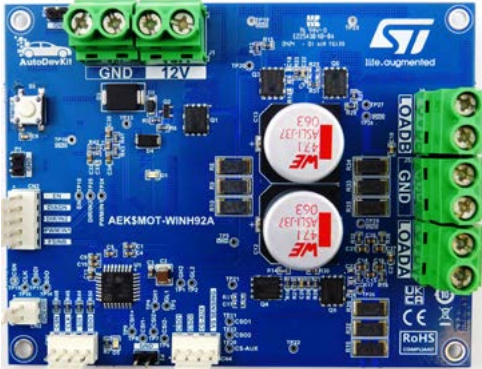
AutoDevKit Studio example codes

- Demo code to control two DC motors in a loop or three DC motors using CAN commands [SPC582Bxx_RLA_AEK-MOT-TK200G1_MotorControl]
- Demo code to control two DC motors and turn on/off two LED strings [SPC582Bxx_RLA_AEK-MOT-TK200G1_MotorControl_via_CAN]
- Demo code to control one DC motor in clockwise or in counter-clockwise mode [SPC582Cxx_RLA_MainECUFor_AEK-MOT-TK200G1Control Test Application]



AEK-MOT-WINH92

Window lift DC motor driver board with anti-pinch mechanism



BOARD FEATURES

- Programmable gain current sensing for advanced anti-pinching algorithms
- Diagnostic pin to alert the microcontroller in case of faults
- Fault detection capabilities

Key product

- **L99H92** Flexible H-bridge gate driver with configurable current sensing, advanced diagnostics and protection features

Additional products

- **STPS2H100ZFY** 100V, 2A Power Schottky rectifier
- **SM30T33CAY** 28 V DC, bidirectional transient voltage suppressor
- **STTH102AY** 200 V, 1 A ultrafast diode
- **STL285N4F7AG** 40 V, 120 A STripFET F7 Power MOSFET
- **TSC103IYPT** High-voltage, high-side current sense amplifier

AutoDevKit Studio example codes

- Sample code to configure the board for windows lift application [SPC58ECxx_RLA – AEK_MOT_WINH92 Window Lift Test application]
- Sample code to configure the board to drive one bidirectional DC motor [SPC58ECxx_RLA_AEK_MOT_WINH92 Full Bridge Test application]
- Sample code to configure the board to drive two unidirectional DC motors [SPC58ECxx_RLA_AEK_MOT_WINH92 Dual Half Bridge Test application]



AEK-POW-BMSCC

Optimized form-factor BMS evaluation board based on L9963E



BOARD FEATURES

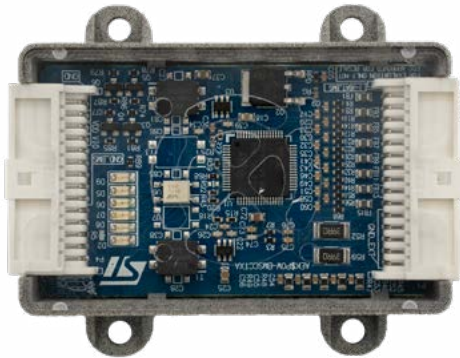
- The small size allows for greater flexibility in battery pack installation in confined spaces
- Can be used in a centralized daisy chain (up to 31 BMS nodes) as an intermediate node
- Two connectors for easy and fast plug-and-play

Key product

- **L9963E** Battery management chip

AEK-POW-BMSCCTX

Optimized form-factor BMS evaluation board based on L9963E and L9963T



BOARD FEATURES

- The small size allows for greater flexibility in battery pack installation in confined spaces
- Ensure isolated connection to an external MCU, thanks to the embedded transceiver
- Two connectors for easy and fast plug-and-play

Key products

- **L9963E** Battery management chip
- **L9963T** SPI to isolated SPI bi-directional transceiver

AutoDevKit Studio example codes

- Test application for centralized BMS topology, managing a battery pack of 14 Li-ion batteries. A Graphical User Interface, running on a PC, allows an easy monitoring of the overall system [AEK-MCU-C4MINI -AEK_POW_BMSCCTX_GUI_application for discovery]
- The same of the previous test application, managing 2 battery packs of 14 Li-ion batteries. [AEK-MCU-C4MINI - AEK_POW_BMSCCTX_2_nodes_chain GUI_application for discovery]



AEK-POW-BMSNOTX

Non-isolated battery management (BMS) node dedicated to auxiliary battery packs



Key product

- **L9963E** Battery management chip

BOARD FEATURES

- Able to manage 4 to 14 battery cells
- Elaborate monitoring network to sense the voltage, current, and temperature of each battery cell

Additional products

- **STL8N10LF3** 100 V, 7.8 A STripFET F3 Power MOSFET
- **STD105N10F7AG** N-channel 100 V, 80 A STripFET F7 Power MOSFET

AutoDevKit Studio example codes

- Test application for a centralized topology with one BMS IC managing a battery pack with 14 Li-ion battery cells [SPC58EC - AEK_POW_BMSNOTX_SOC_Est_SingleAccess_CHAIN_application for discovery]
- Test application for a centralized topology with one BMS IC managing a battery pack with 14 Li-ion battery cells. A Graphical User Interface, running on a PC, allows an easy monitoring of the overall system [SPC58EC - AEK_POW_BMSNOTX_SOC_Est_SingleAccess_CHAIN_GUI_application for discovery]

AEK-POW-BMSWTX

Battery management (BMS) evaluation board ensuring an isolated connection to an external MCU



BOARD FEATURES

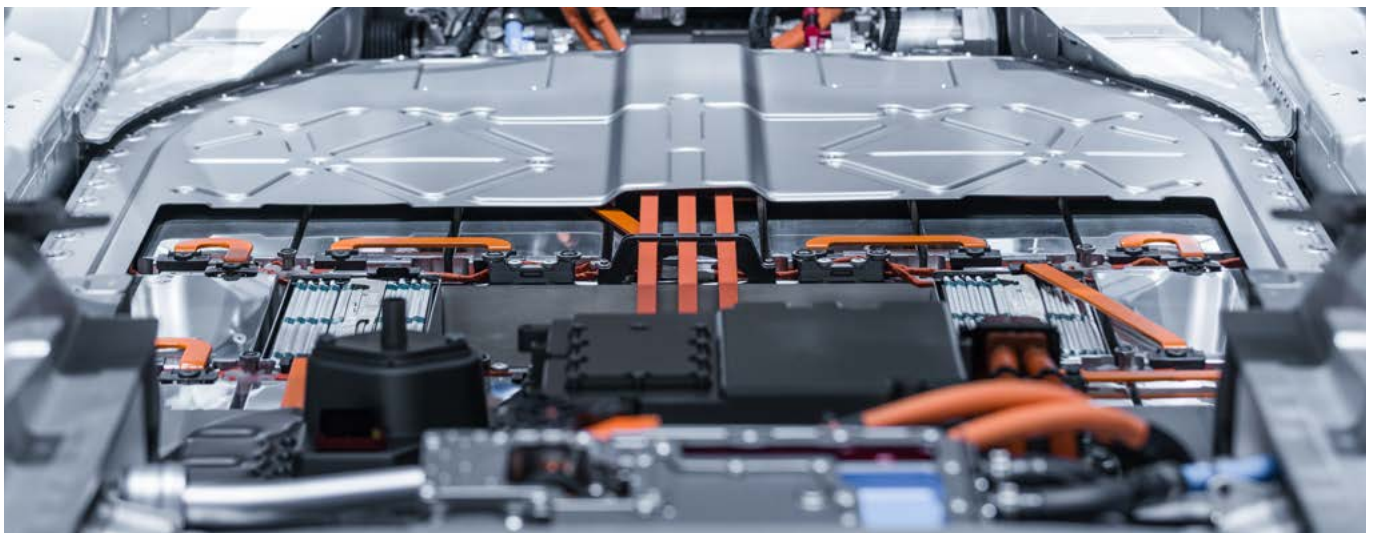
- Measurement and diagnostic tasks can be executed either on demand or periodically, with a programmable cycle interval
- Elaborate monitoring network to sense the voltage, current, and temperature of each battery cell
- Measurement data are available for an external microcontroller to perform charge balancing and to compute the SOC and SOH

Key products

- **L9963E** Battery management chip
- **L9963T** SPI to isolated SPI bi-directional transceiver

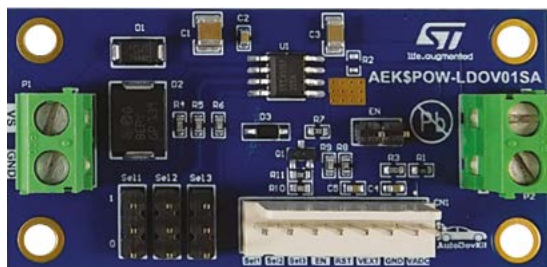
AutoDevKit Studio example codes

- Test application for a centralized topology with one BMS IC managing a battery pack with 14 Li-ion battery cells [SPC58xx - AEK_POW_BMSWTX_SOC_Est_SingleAccess_CHAIN]
- Test application for a centralized topology with one BMS IC managing a battery pack with 14 Li-ion battery cells. A Graphical User Interface, running on a PC, allows an easy monitoring of the overall system [SPC58EC -AEK_POW_BMSWTX_SOC_Est_SingleAccess_CHAIN_GUI_application for discovery]
- Test application for a dual access topology with 2 BMS ICs managing up to 28 battery cells [SPC58EC - AEK_POW_BMSWTX_SOC_Est_DualAccess_CHAIN]



AEK-POW-LDOV01S

Linear voltage regulator evaluation board with configurable output voltage



BOARD FEATURES

- Can be used in several applications: MCU supplies, automotive display drivers, sensors, and infotainment processors
- Eight selectable fixed output voltages: (0.8, 1.2, 1.5, 1.8, 2.5, 2.8, 3.3, and 5 V) with 200 mA load current capability

Key product

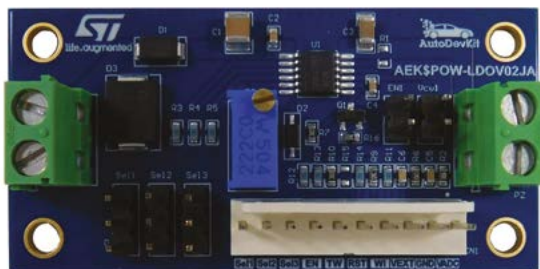
- **L99VR01STR** Low dropout linear voltage regulator with configurable output voltage

Additional products

- **STPS2H100ZF** 100 V, 2 A Power Schottky rectifier
- **BAT46JFILM** 100 V, 150 mA signal Schottky diode
- **TSX711ILT** Precision (200 μ V), rail-to-rail 16 V CMOS op amp

AEK-POW-LDOV02J

Linear voltage regulator evaluation board with configurable output voltage and advanced diagnostics



BOARD FEATURES

- Can be used in several applications: MCU supplies, automotive display drivers, sensors, and infotainment processors.
- Eight selectable fixed output voltages: (0.8, 1.2, 1.5, 1.8, 2.5, 2.8, 3.3, and 5 V) with 500 mA load current capability
- IShort control and advanced thermal warning functions

Key product

- **L99VR02J** Low dropout linear voltage regulator with configurable output voltage and advanced diagnostics

Additional products

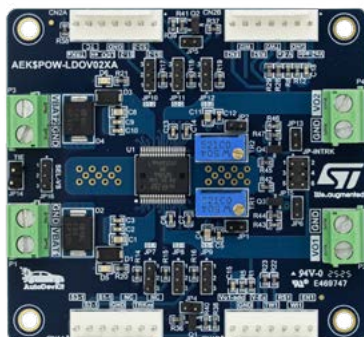
- **STTH102AY** 200 V, 1 A ultrafast diode
- **STPS0540ZY** 40 V, 0.5 A power Schottky rectifier
- **SMCJ24CA-TR** 1500 W, 24 V transient voltage suppressor

AutoDevKit Studio example codes

- Example code for a DC-DC voltage regulator using an SPC58EC MCU [SPC58ECxx_RLA AEK_POW_LDOV01x DC-DC Voltage Regulator]
- Example code for a DC-DC voltage regulator using an SPC582B MCU [SPC582Bxx_RLA AEK_POW_LDOV02J DC-DC Voltage Regulator]

AEK-POW-LDOV02X

Dual linear voltage regulator evaluation board with configurable output voltage and advanced diagnostics



Key product

- **L99VR01STR** Low dropout linear voltage regulator with configurable output voltage

BOARD FEATURES

- Can be used in several applications: navigation systems, MCU supplies, audio systems, automotive display drivers, sensors, infotainment processors, and powertrain systems
- Eight selectable fixed output voltages: (0.8, 1.2, 1.5, 1.8, 2.5, 2.8, 3.3, and 5 V) with 250 mA load current capability per channel
- IShort control and advanced thermal warning functions

Additional products

- **STR2N2VH5** N-Channel 20 V, 2.3 A Power MOSFET
- **STPS140AY** 40 V, 1 A power Schottky rectifier
- **SMCJ24CA-TR** 1500 W, 24 V transient voltage suppressor

AutoDevKit Studio example codes

- Test applications for a DC-DC voltage regulator using an SPC58xx MCU, switching both channels output voltages among the possible values [SPC58xx_RLA AEK_POW_LDOV02X Test Application]
- Same of the previous test application, with automatic project configuration via AEK Dashboard [AEK-MCU-C4MINI – AEK-POW-LDOV02X Test Application with AEK Dashboard]

AEK-POW-PDUMINI

12 V power distribution unit (PDU) board featuring 10 channels for superb standby performance



BOARD FEATURES

- Can be operated in assembly, parking, and normal driving modes
- eFuse protected high-side drivers with current capability from 5 to 27 A
- Advanced system standby features
- The typical MCU companion board is the AEK-MCU-C4MLIT3 featuring PDU remote access via CAN

Key products

- **L99SP08** High-side switch for ultra-low current consumption automotive systems
- **VN7140AJ** High-side driver with MultiSense analog feedback for automotive application
- **SPSB0815** Automotive power management IC with LIN and CAN-FD
- **LDL40** 200 mA low dropout LDO
- **VNF9D1M5Q** 2-channel high-side driver for automotive power distribution application
- **Newest STi²Fuses** Intelligent fuses to replace standard melting fuses in automotive power distribution systems

AutoDevKit Studio example codes

- The AEK-POW-PDUMINI software stack is available in source code inside AutoDevKit Studio and is freely available for download for ST customers.
- Test application based on FreeRTOS™ and implementing a service layer to manage a power distribution unit (PDU) in an automotive environment [SPC58ECxx_RLA AEK_POW_PDUMINI]

STEVAL-PDUBV1

26-channel power distribution ECU based on SPC58NG84E7 Chorus 6M MCU and STi²Fuse devices



BOARD FEATURES

- MCU controllable power distribution unit (PDU) dedicated to 12 V board net
- Thanks to the software running on the MCU, the STEVAL-PDUBV1 can be operated in assembly, parking, and normal driving modes
- Two separate power output rails (rail A and rail B) that can be used independently, with different current carrying capabilities: rail A from 5 to 200 A, rail B from 10 to 200 A

Key products

- **L99SP08** High-side switch for ultra-low current consumption automotive systems
- **VNF1248F** High-side switch controller with STi²Fuse protection for 12 V, 24 V and 48 V automotive applications
- **SPC58NG84E7** 32-bit Power Architecture MCU for automotive general purpose applications
- **SPSA068** PMIC with buck and precise voltage reference for MCU applications
- **VN7140AJ** High-side driver with MultiSense analog feedback for automotive application
- **SPSB0815** Automotive power management IC with LIN and CAN-FD
- **LDL40** 200 mA low dropout LDO
- **VNF9D1M5Q** 2-channel high-side driver for automotive power distribution application
- **Newest STi²Fuses** Intelligent fuses to replace standard melting fuses in automotive power distribution systems

Example codes

- The board comes with basic operating firmware (STSW-PDUB-UDS) implementing a CAN message responder coupled with ISO14229 (UDS) standard used for diagnostic purposes
- The software is preburned on the STEVAL-PDUBV1 board, and the same flash memory image can be downloaded from ST.COM from the product folder page of STSW-PDUB-UDS



For more information, please
contact your local ST Sales Office





AEK-POW-SPSB081

Automotive power management evaluation board with enhanced functions



BOARD FEATURES

- Designed for use with the AEK-MCU-C1MLIT1 Discovery board
- Enhanced power management functions minimize power consumption

Additional products

- [STTH102AY](#) 200 V, 1 A ultrafast diode
- [SMAJ40CA-TR](#) 400 W, 40 V transient voltage suppressor
- [ESDLIN1524BJ](#) Transient voltage suppressor for LIN bus

Key product

- [SPSB081](#) Automotive power management IC with LIN and CAN-FD

AutoDevKit Studio example codes

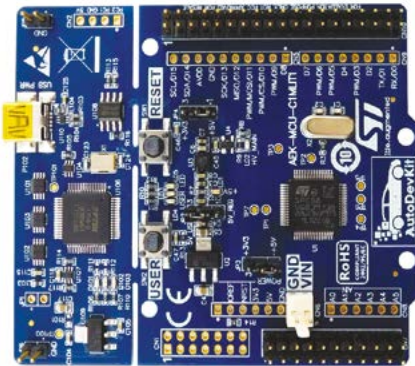
- SPC58xx Test applications to drive four High-Sides outputs in several working modes [SPC58xx_RLA – SPSB081 Test Application for Discovery]
- Same as the previous test application, with automatic project configuration via AEK Dashboard [AEK_MCU_C4MINI – SPSB081 with AEK Dashboard]
- Test application implementing a CAN communication between two SPSB081 devices [SPC582B – AEK_POW_SPSB081_2nodes_CAN]
- Test application driving four High-Sides outputs in several working modes using MCU kit AEK-MCU-C4MLIT3 [AEK_MCU_C4M3LITE – SPSB081 test application with connector]

AutoDevKit

SPC5 MCU discovery boards

AEK-MCU-C1MLIT1

Full-featured SPC58 MCU discovery board hosting a 1-Mbyte SPC58 automotive MCU



BOARD FEATURES

- Full access to all I/O signals and peripherals
- Extension headers for all pins for fast prototyping
- On-board USB-JTAG PLS debugger
- 3 integrated programmers/debuggers

Additional products

- [LD39050](#) 500 mA low-noise, low dropout voltage regulator
- [LD1117](#) 800 mA Adjustable and fixed low dropout voltage regulator
- [STM6315](#) Open-drain MPU reset circuit

Demonstrator

- [AEK-AUD-C1D9031](#) Very compact vehicle warning sound (AVAS) evaluation board

Key product

- [SPC582B60E1](#) 1-Mbyte automotive MCU

AEK-MCU-C4MINI1

All-in-one, fast-prototyping, user-friendly motor control evaluation board based on a 4-Mbyte SPC58 automotive MCU



BOARD FEATURES

- Designed for use with a user-friendly GUI and [2.8" LCD touchscreen expansion board](#)
- OpenOCD debugger/programmer
- System reset button
- Integrated reverse battery protection circuit

Additional products

- [A5973AD](#) Up to 1.5 A step-down switching regulator
- [M93S46-W](#) 1-Kbit serial EEPROM with block protection
- [LD1117](#) 800 mA Adjustable and fixed low dropout voltage regulator
- [STM6315](#) Open-drain microprocessor reset circuit

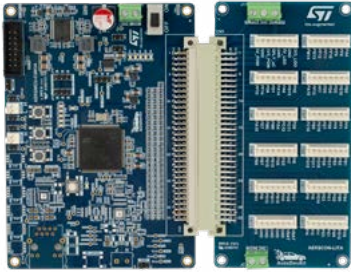
AutoDevKit Studio example code

- A complete set of software packages and example code is available

Key product

- [SPC58EC80E5](#) 4-Mbyte automotive MCU

Cost-optimized and compact size discovery kit for SPC58EC80E5 automotive microcontroller



BOARD FEATURES

- Consists of an MCU board and a connector board
- Addresses high safety and security levels in automotive applications
- Supports high-speed CAN-FD applications
- Integrates an OpenOCD programmer/debugger

Key product

- **SPC58EC80E5** 4-Mbyte automotive MCU

Additional products

- **SMAJ24CA-TR** SMA TVS 24VDC Bidirectional
- **STL42P6LLF6** P-channel 60V 42A STripFET F6 Power MOSFET
- **STR2N2VH5** N-channel 20V 2.3A STripFET H5 Power MOSFET
- **2STR1160** Low voltage fast-switching NPN power transistor
- **2STR2160** Low voltage fast-switching PNP power transistor
- **L99VR02J** Automotive linear voltage regulator with configurable output voltage

AutoDevKit Studio example code

- A complete set of software packages and example code is available



AEK-MCU-SPC5LNK

Programmer and debugger dongle for SPC5 automotive microcontrollers

Different dongles are available for OpenOCD (AEK-MCU-SPC5LNK) and UDE® PLS (AEK-MCU-SPC5LNKU)



BOARD FEATURES

- Virtual COM port for communication between host PC and MCU via UART
- USB connector for supply and data signals
- Provides NVM programming (erase/program/verify)
- Compliant with the IEEE 1149.1 JTAG protocol

A compact, cost-effective USB-to-JTAG debugger/programmer dongle that ensures short development times through easy-to-use hardware and software fully integrated into SPC5-Studio and AutoDevKit Studio IDEs.

Additional products

- [USBLC6-2P6](#) ESD protection for high-speed interfaces
- [M93S46-W](#) 1-Kbit serial EEPROM with block protection
- [LD1117S33TR](#) 3.3 V low-dropout voltage regulator

AEK-MCU-SRLNK

Programmer and debugger dongle for Stellar automotive microcontrollers



BOARD FEATURES

- Dongle for SR5 and SR6 Stellar automotive MCUs
- USB connector for supply and data communication
- Provides NVM programming (erase/program/verify)
- Compliant with the IEEE 1149.1 JTAG protocol
- Compatible with [StellarStudio](#)

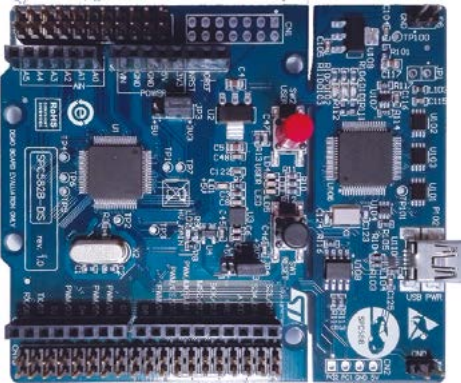
A compact, cost-effective USB/JTAG debugger/programmer dongle that ensures short development times through easy-to-use hardware and software fully integrated into StellarStudio IDE.

Additional products

- [USBLC6-2P6](#) ESD protection for high-speed interfaces
- [M93S46-W](#) 1-Kbit serial EEPROM with block protection
- [LD1117S33TR](#) 3.3 V low-dropout voltage regulator

SPC582B-DIS

Low-cost, 1-Mbyte SPC582B Discovery kit



BOARD FEATURES

- Full access to all I/O signals and peripherals
- Extension headers for all pins for fast prototyping
- Arduino Uno revision 3 connectivity
- Flexible board power supply
- On-board USB-JTAG PLS debugger

Key product

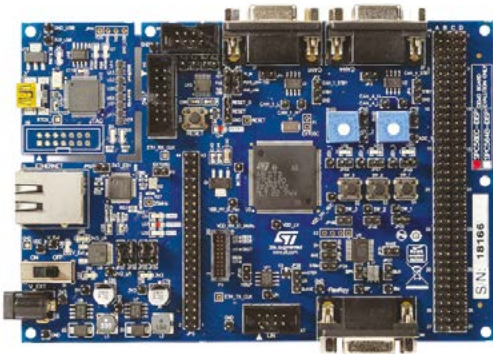
- [SPC582B60E1](#) 1-Mbyte automotive MCU

Additional resources

- [LD39050](#) 500 mA low-noise, low dropout voltage regulator
- [USBL6-2](#) – ESD protection for USB 2.0 high-speed interfaces
- [M93S46-W](#) 1-Kbit serial EEPROM with block protection
- [LD1117](#) 800 mA Adjustable and fixed low dropout voltage regulator
- [STM6315](#) Open-drain MPU reset circuit

SPC58EC-DISP

Flexible, 4-Mbyte SPC58EC Discovery kit



BOARD FEATURES

- Full access to all SPC58 CPUs, I/O signals and peripherals
- Extension headers for all pins for fast prototyping
- Arduino Uno revision 3 connectivity
- Flexible board power supply
- On-board USB-JTAG PLS debugger

Key product

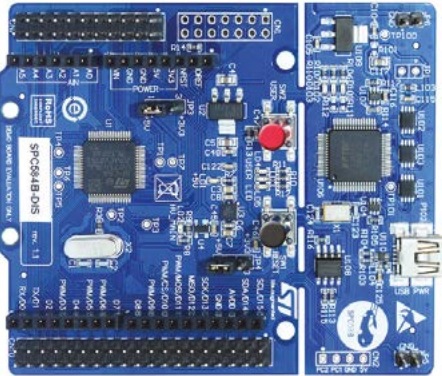
- [SPC58EC80E5](#) 4-Mbyte automotive MCU

Additional resources

- [ST3232EB](#) 15 kV ESD for RS-232 drivers and receivers
- [USBL6-2](#) – ESD protection for USB 2.0 high-speed interfaces
- [M93S46-W](#) 1-Kbit serial EEPROM with block protection
- [LD1117](#) 800 mA adjustable and fixed low dropout voltage regulator
- [LD1117A](#) 1 A adjustable, fixed low dropout voltage regulator
- [STM6315](#) Open-drain MPU reset circuit

SPC584B-DIS

Low-cost, 2-Mbyte SPC584B Discovery kit



BOARD FEATURES

- Full access to all SPC58 CPUs, I/O signals and peripherals
- Extension headers for all pins for fast prototyping
- Arduino Uno revision 3 connectivity
- Flexible board power supply
- On-board USB-JTAG PLS debugger

Key product

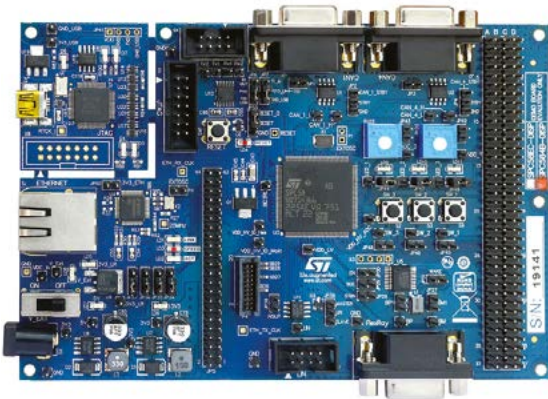
- **SPC584B70E1** 2-Mbyte automotive MCU

Additional products

- **STPS340** 40 V, 3 A Schottky rectifier
- **ST3232EB** 15 kV ESD for RS-232 drivers and receivers
- **M93S46-W** 1-Kbit serial EEPROM with block protection
- **STM6315** Open-drain MPU reset circuit

SPC584B-DISP

Flexible 4-Mbyte SPC58EC Discovery kit



BOARD FEATURES

- Full access to all SPC58 CPUs, I/O signals and peripherals
- Extension headers for all pins for fast prototyping
- Arduino Uno revision 3 connectivity
- Flexible board power supply
- On-board USB-JTAG PLS debugger

Key product

- **SPC58EC80E5** 4-Mbyte automotive MCU

Additional products

- **STPS340** 40 V, 3 A Schottky rectifier
- **ST3232EB** 15 kV ESD for RS-232 drivers and receivers
- **M93S46-W** 1-Kbit serial EEPROM with block protection
- **STM6315** Open-drain MPU reset circuit

AutoDevKit

Industrial-grade solution evaluation tools



AEK-SNS-2TOFM1

Predefined gesture detection system based on time-of-flight (ToF) ranging sensors



BOARD FEATURES

- A more cost-effective, reliable solution to retrieve and process real-time sensor data for gesture detection
- Specifically designed for placement under the car bumper
- Board control through an external domain controller via a CAN or a serial interface

Key products

- **SPC582B60E1** 1-Mbyte automotive MCU
- **VL53L1X** Long-range, high-accuracy time-of-flight ranging sensors

AutoDevKit Studio example code

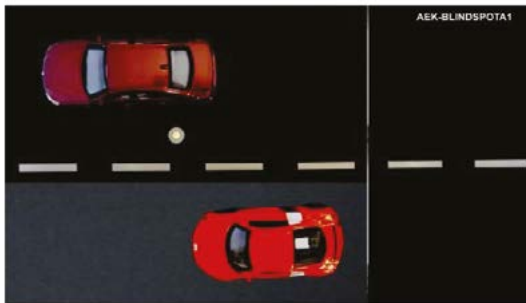
- Demo to detect a specific foot and hand gesture and to alert a domain controller via CAN message that the detection event occurred [SPC582Bxx_RLA AEK_SNS_2TOFM1_CAN_for_footdetection]

AutoDevKit Demonstrators

AEKD-BLINDSPOTA1

AEKD-BLINDSPOTB1

Blind-spot detection simulation kit and set of assembled boards



KIT FEATURES

- Ready-to-use kit designed to help developers build effective firmware for blind-spot detection systems

Key products

- [SPC58EC80E5](#) 4-Mbyte automotive MCU
- [VN7050AS](#) High-side driver with MultiSense analog feedback

Additional resources

- Full-featured SPC58 MCU discovery board hosting a 4-Mbyte [SPC58EC80E5](#) automotive MCU
- Set of assembled boards for blind-spot detection simulation kit ([AEKD-BLINDSPOTB1](#))
- Flexible LED driver board for high-brightness LED front lighting applications ([AEK-LED-21DISM1](#))
- Evaluation board for VN7050AS high-side driver with MultiSense analog feedback ([EV-VN7050AS](#))



Watch the Video

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