October 20, 2021

New ISO 26262 Functional Safety Packages Simplify Design of ASIL B and ASIL C Safety Applications Using dsPIC®, PIC18 and AVR® Microcontrollers

Certified functional safety solution from Microchip accelerates the development and certification of automotive safety applications

CHANDLER, Ariz., Oct. 20, 2021 (GLOBE NEWSWIRE) -- Safety is a primary concern in automotive applications to ensure reliable operation and end users' wellbeing. Microchip Technology Inc. **(Nasdaq: MCHP)** is offering newly certified functional safety packages to enable engineers to develop their products as per the ISO 26262 functional safety standard. Microchip is announcing the release of ISO 26262 functional safety packages for dsPIC33C digital signal controllers (DSCs), PIC18 and AVR microcontrollers (MCUs) that accelerate the development of safety-critical designs targeting ASIL B and ASIL C safety level and certification efforts.

The complete functional safety ecosystem for dsPIC33C DSCs includes:

- AEC Q100 Grade 0-qualified functional safety ready dsPIC33C DSCs with dedicated hardware safety features
- SGS TÜV Saar-certified ASIL B Ready Failure Modes, Effects and Diagnostic Analysis (FMEDA) report and Functional Safety Manual (FSM)
- TÜV Rheinland-certified functional safety diagnostic libraries for designs targeting up to ASIL C
- A functional safety reference application, showing the steps required to develop compliant designs, and the collateral that must be generated for (ASIL B or ASIL C) compliance
- Various functional safety analysis reports and certification reports that help ease compliance and certification

The complete functional safety ecosystem for PIC18 and AVR MCUs includes:

- AEC Q100 Grade 1-qualified functional safety ready PIC18-Q84 MCUs with CAN FD and AVR DA MCUs with LIN interfaces, both with hardware support for capacitive touch sensors
- SGS TÜV Saar-certified ASIL B Ready Failure Modes, Effects and Diagnostic Analysis (FMEDA) report and Functional Safety Manual (FSM)
- Functional safety diagnostic libraries
- ASIL B Ready certificates and certification reports to help ease compliance and certification

Whether an engineer is new to ISO 26262 functional safety or a seasoned expert, Microchip has proven experience and solutions to help them meet functional safety requirements and certify designs while minimizing cost, risk and development time. The functional safety packages listed below, together with our development tools that come with the safety documents, allow engineers to develop compliant systems.

Microchip is offering three ISO 26262 functional safety packages for purchase to help customers with different levels of expertise and in different stages of their evaluation and design cycles:

- The functional safety **basic package** offers basic resources like the ASIL B Ready certified FMEDA and Safety Manual for customers to get started with the evaluation of target functional safety levels and the design of safety-critical automotive applications.
- The functional safety **starter package** offers ASIL B Ready certified FMEDA and Safety Manual, a reference application and ASIL C compliant diagnostic libraries that help designers understand the ISO 26262-compliant development process and the reports that must be generated for compliance.
- The functional safety **full package** offers a complete solution for beginners and seasoned experts to simplify the design and certification of safety-critical automotive applications. In addition to the offerings of the starter package, the full package includes certified diagnostic libraries with source code and the associated safety analysis reports for designs targeting up to ASIL C.

In addition to the functional safety packages, Microchip offers a TÜV SÜD-certified design tool package for our MPLAB® development tools ecosystem to ease tools qualification. This includes a TÜV SÜD-certified MPLAB XC functional safety compiler with the TÜV SÜD certificate, a functional safety manual for the compiler along with safety plans and complete tools classification and qualification reports for the compiler, MPLAB X Integrated Development Environment (IDE), MPLAB Code Coverage and all MPLAB development ecosystem programs. Microchip also offers Functional Safety Ready CAN FD and LIN transceivers and other companion devices, including voltage supervisor devices, which can be used with the functional safety ready DSCs and MCUs in a wide range of automotive applications.

“As the level of sophistication and electronics increases in cars, functional safety requirements are becoming much more rigorous in automotive designs. To help our clients develop safety applications quickly with minimal risk and on budget, Microchip has greatly expanded the offering of certified safety documentation and diagnostic self-test libraries, development tools and technical support,” said Joe Thomsen, vice president of Microchip’s MCU16 business unit. “As a key supplier in the automotive market, we will continue to expand our functional safety support to give our clients a competitive advantage.”

“As an accredited certification body for Functional Safety, TÜV Rheinland offers independent audit, verification, assessment and certification services relating to ISO 26262 and IEC 61508 that stand by quality and safety,” said Thomas Steffens, head of the certification body for functional safety and cyber security at TÜV Rheinland. “As a result of our assessment based on our certification program according to ISO 26262, we confirm that the Safety Diagnostic libraries for the dsPIC33C DSC series from Microchip comply with the requirements of ASIL C. The Diagnostic libraries can be used in automotive safety related applications targeting up to ASIL C.”

Development Tools
The ISO 26262 functional safety ready dsPIC33C DSCs, and PIC18 and AVR MCUs are supported by the TÜV SÜD-certified MPLAB XC16 and MPLAB XC8 functional safety compilers **(SW006022-FS** and **SW006021-FS),** the MPLAB Code Coverage tool (**SW006026-COV**), **MPLAB X IDE,** MPLAB development ecosystem debugger/programmers and the safety documentation package to make the tool qualification effort easier.

Availability
To learn more about the functional safety packages for dsPIC33 DSCs, visit **www.microchip.com/dsPIC33-ISO26262**.

For more information about PIC and AVR MCUs that are ASIL B ready, please visit **www.microchip.com/PIC-AVR-ISO26262.**

Resources
High-res images available through Flickr or editorial contact (feel free to publish):

- Application image: **www.flickr.com/photos/microchiptechnology/51603572194/sizes/l/**

About Microchip Technology
Microchip Technology Inc. is a leading provider of smart, connected and secure embedded control solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs which reduce risk while lowering total system cost and time to market. The company's solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at **www.microchip.com**.

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Source: Microchip Technology Inc.