Functional Safety Information TCAN1164-Q1 Functional Safety Report

TEXAS INSTRUMENTS

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1 Purpose of the Functional Safety Report

The purpose of the Functional Safety Report is to summarize the results from analysis and documentation involved in the development of this project and to determine the results are sufficient to claim compliance to the identified functional safety standard(s). This high level overview is intended to be used by customers as a part of their safety case with respect to the TCAN1164-Q1.

Note

In this document, the TCAN1164-Q1 refers to both the TCAN1164-Q1 and the TCAN1164T-Q1. The difference between these devices is listed in Table 1-1.

Table 1-1. Devices Differences

Device	Maximum Speed	VeLIO ⁽¹⁾	
TCAN1164-Q1	8 Mbps	No	
TCAN1164T-Q1	5 Mbps	Yes	



2 Summary of Assessment

The TCAN1164-Q1 was developed using Texas Instruments Incorporated Quality Managed product development process and qualified according to AEC Q100 Grade 1. This assessment of the functional safety documentation for these products indicate they meet the minimum requirements for enabling additional system level analysis.

These products did not follow any functional safety development process and do not claim compliance to any functional safety standard.

The work products developed may be helpful for the customer to integrate these products into the functional safety systems. TI recommends the customer integrate this product through "evaluation of hardware elements" as described in ISO 26262-8 Clause 13 or similar method.

The TCAN1164-Q1 passes the assessment.

3 Product Description

The TCAN1164-Q1 is a high-speed Controller Area Network (CAN) system basis chip (SBC) that meets the physical layer requirements of the ISO 11898-2:2016 high-speed CAN specification. The transceiver supports both classical CAN and CAN FD networks up to 8 megabits per second (Mbps) for the TCAN1164-Q1 or 5-Mbps for the TCAN1164T-Q1.

The TCAN1164-Q1 supports a wide input supply range and integrates a 5-V LDO output. The 5-V LDO output (V_{CCOUT}) supplies the CAN transceiver voltage internally as well as additional current externally.

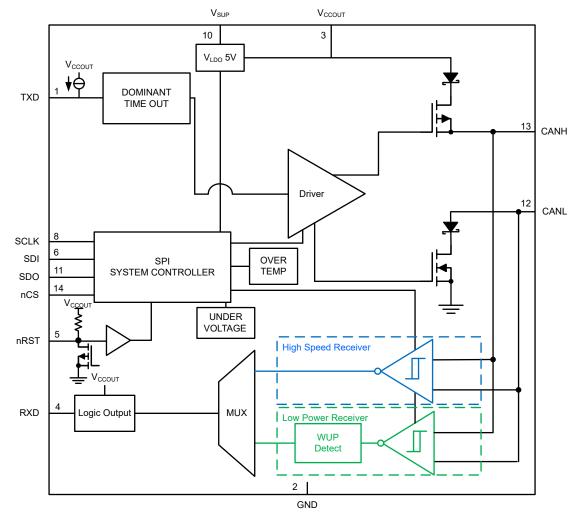


Figure 3-1. Functional Block Diagram (TCAN1164-Q1 and TCAN1164T-Q1)

4 Fulfillment of Texas Instruments Functional Safety Quality-Managed Requirements

Texas Instruments carried out this assessment with respect to relevant requirements for the Functional Safety Quality-Managed Requirements.

Lifecycle Phase	Document Name	Version Number	Assessment Results	Evidence
None	Functional Safety Manual	1	Pass	TI.com
	Functional Safety Analysis (Quantitative FMEDA)	1		Document Available on MySecure
	Functional Safety Analysis Report	1	Pass	TI.com

Table 4-1. Details of Functional Safety Quality-Managed Documents

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