

I2C Datasheet

I2C bus interface

Overview

- This IP is a two-channel I2C-bus interface (RIIC0, RIIC2).
- The RIIC module conforms with the NXP I2C-bus (Inter-IC bus) interface and provides a subset of its functions.

Key Features

- Communications format
 - I2C-bus format or SMBus format
 - Master mode or slave mode selectable
 - Automatic securing of the various setup times, hold times, and bus-free times for the transfer rate
- Transfer rate : Fast-mode Plus is supported (up to 1 Mbps)
- Issuing and detecting conditions : Start, restart, and stop conditions are automatically generated. Start conditions (including restart conditions) and stop conditions are detectable.
- Slave address
 - Up to three different slave addresses can be set.
 - 7-bit and 10-bit address formats are supported (along with the use of both at once).
 - General call addresses, device ID addresses, and SMBus host addresses are detectable.
- Acknowledgment
 - For transmission, the acknowledge bit is automatically loaded. Transfer of the next data for transmission can be automatically suspended on detection of a not-acknowledge bit.
 - For reception, the acknowledge bit is automatically transmitted. If a wait between the eighth and ninth clock cycles has been selected, software control of the value in the acknowledge field in response to the received value is possible.

Block diagram

