

RG3MxxB12

I3C/I2C/SMBus Basic 2:N Hub

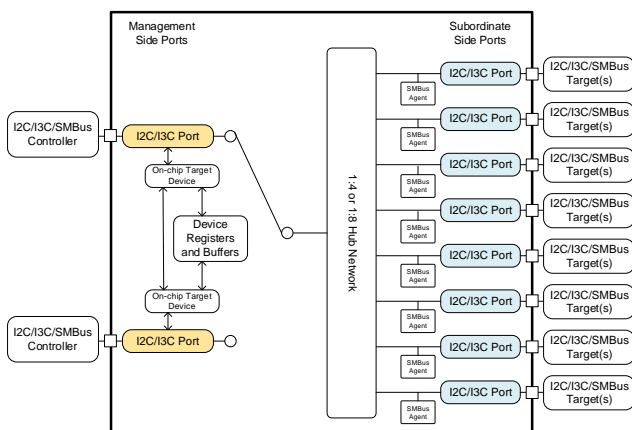
The RG3MxxB12 is a Hub device that connects two Management Side Ports to four or eight Subordinate Side Ports. Each Management Side Port connects to an I3C/I2C/SMBus Controller, and each Subordinate Port connects to an I3C/I2C/SMBus Network. The connectivity and protocol are per-port configurable.

Each management port has access to the registers and resources using the on-chip target devices. One of the management ports is selected to connect to the Hub Network. The Hub Network can provide transparent and non-transparent bridging between the selected Management Port and the Subordinate Ports.

The RG3MxxB12 family consists of four devices:

- RG3M48B12 – 4 subordinate ports, pre-configured
- RG3M88B12 – 8 subordinate ports, pre-configured
- RG3M47B12 – 4 subordinate ports, user-configuration
- RG3M87B12 – 8 subordinate ports, user-configuration

Block Diagram



Features

- 2:4 or 2:8 Hub device
- Supports I2C, I3C Basic, and SMBus protocol
- Up to 12.5MHz transfer rate
- Single 1.8V-3.3V power supply input; System input or on-chip regulated IO voltage supplies
- Two Management Port IO voltage domains; each port supports an independent IO voltage
- Selects two Management Ports using pin or in-band command; supports communication between the two Management Ports
- Two Subordinate Port IO voltage domains
- Each port supports 1.0V, 1.1V, 1.2V, and 1.8V push-pull IO levels
- Each port supports 1.0V, 1.1V, 1.2V, 1.8V, and 2.5V-3.3V open-drain IO levels
- Supports I3C dynamic address assignment, IBI, and Hot Join
- Supports both generic MIPI-I3C Basic Bus and JEDEC SPD Management Bus context
- Supports both MIPI I3C CCCs and JEDEC SPD Management Bus CCCs
- Supports Bus Reset function
- Supports Hub Cascading
- Supports I3C to I2C or SMBus bridging, SMBus clock stretching, SMBus-based management protocols (e.g., MCTP)
- Supports Level Shifting, Load isolation, IO re-driving, Drive Strength Programming and Calibration, and programmable on-chip pull-up resistors
- Programmable I²C, I3C bus addressing scheme
- 4 x 4 mm, 0.4mm pitch 28-pin VFQFPN (QFN) package

Applications

- Server boards
- Storage boards
- Industrial control boards
- PCs/notebooks
- Embedded automation

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