

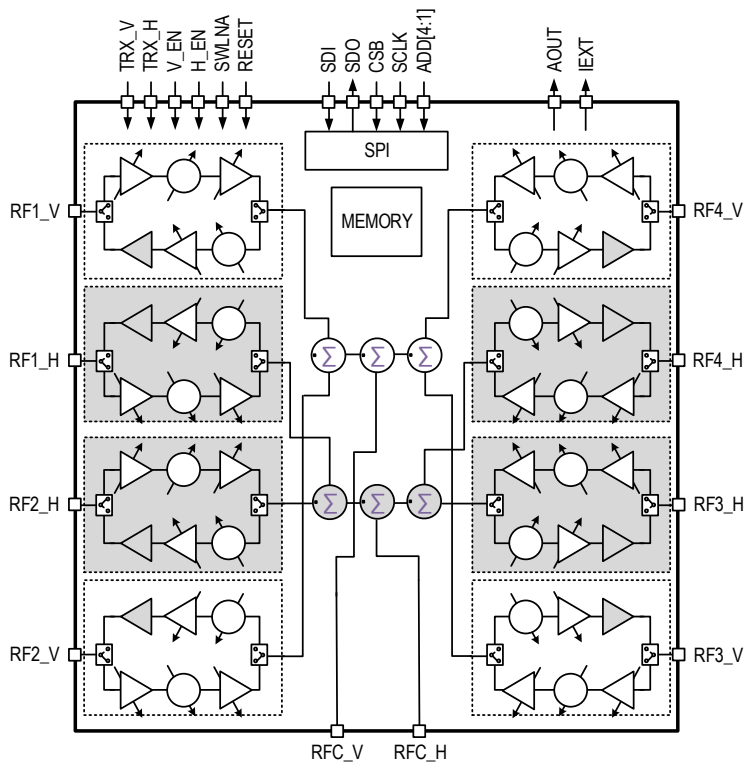
Description

The F5288 is an eight-channel TRX half-duplex silicon IC designed using a SiGe BiCMOS process for 28GHz dual polarization 5G phased-array applications. The core IC has very flexible gain and phase control on each channel to achieve fine beam steering and gain compensation between radiating channels. The core design includes standard SPI protocol that operates up to 50MHz with fast-beam switching and fast beam-state loading.

Typical Applications

- 5G Dual Polarization Phased-Array
- Beam Steering

Block Diagram



Features

- 26.5-29.5GHz operation
- 8 radiation channels
- 100ns typical TX/RX mode switching time
- 20ns typical gain and phase settling time
- 31.5dB gain attenuation range
- 4-bit chip address
- Integrated PTAT with external biasing
- Internal temperature sensor
- Internal power detection
- Up to 50MHz SPI control
- 2048 on-chip programmable beam states
- Supply voltage: +2.3V to +2.7V
- 4.2 mm × 5.5 mm, 80-BGA package
- -40°C to +95°C ambient operating temperature range
- 50°C typical ambient operating temperature

Ordering Information

Orderable Part Number	Package	MSL Rating	Shipping Packaging	Temperature
F5288ANGI	4.2 mm × 5.5 mm, 80-BGA	MSL 3	Tray	-40° to +95°C
F5288ANGI8	4.2 mm × 5.5 mm, 80-BGA	MSL 3	Reel	-40° to +95°C
F5288EVS	Evaluation System			

Revision History

Revision Date	Description of Change
May 19, 2020	Initial release.

IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES (“RENESAS”) PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers skilled in the art designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only for development of an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising out of your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Rev.1.0 Mar 2020)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.