

Description

The F5280 is a 4-channel TRX half-duplex silicon IC designed using a SiGe BiCMOS process for 28GHz 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, fast beam-state loading, and fast four on-chip beam storage.

Competitive Advantage

- High integration
- Fast switching
- Fast and flexible state programming and loading
- Minimal footprint

Typical Applications

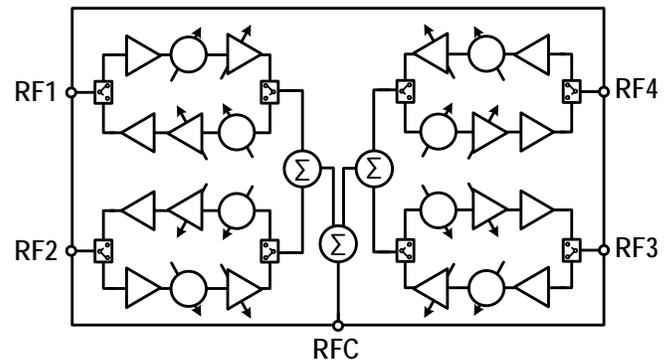
- 5G Phased-Array
- Beam Steering

Features

- 25GHz to 31GHz operation
- 4 radiation channels
- 100ns typical RF switch Tx/Rx mode switching time
- 20ns typical gain and phase settling time
- 3° typical RMS phase error
- 0.4dB typical RMS gain error
- Advanced SPI with 4 state memory
- 6-bit chip address
- Integrated PTAT with external biasing
- Internal temperature sensor
- Up to 50MHz SPI control
- Programmable on-chip memory
- Supply voltage: +2.3V to +2.7V
- -40°C to +105°C ambient operating temperature range
- 3.6 × 3.6 mm, 49-BGA package

Block Diagram

Figure 1. Block Diagram





Ordering Information

| Orderable Part Number | Description and Package | MSL Rating | Carrier Type | Temperature |
|-----------------------|---|------------|--------------|----------------|
| F5280AVGK | 3.6 × 3.6 × 0.9 mm BGA | MSL 3 | Tray | -40° to +105°C |
| F5280AVGK8 | 3.6 × 3.6 × 0.9 mm BGA | MSL 3 | Reel | -40° to +105°C |
| F5280EVB | F5280 Evaluation Board | | | |
| F5280EVS | F5280 Evaluation Kit System, including Evaluation Board, 2x THRU Reference Fixture, FT2232H Mini-Module Microcontroller, Digital Cable, Power Cable, and USB-to-Mini Cable. | | | |

Revision History

| Revision Date | Description of Change |
|------------------|-----------------------|
| November 6, 2018 | Initial release. |



Corporate Headquarters
6024 Silver Creek Valley Road
San Jose, CA 95138
www.IDT.com

Sales
1-800-345-7015 or 408-284-8200
Fax: 408-284-2775
www.IDT.com/go/sales

Tech Support
www.IDT.com/go/support

DISCLAIMER Integrated Device Technology, Inc. (IDT) and its affiliated companies (herein referred to as "IDT") reserve the right to modify the products and/or specifications described herein at any time, without notice, at IDT's sole discretion. Performance specifications and operating parameters of the described products are determined in an independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties.

IDT's products are not intended for use in applications involving extreme environmental conditions or in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are trademarks or registered trademarks of IDT and its subsidiaries in the United States and other countries. Other trademarks used herein are the property of IDT or their respective third party owners. For datasheet type definitions and a glossary of common terms, visit www.idt.com/go/glossary. All contents of this document are copyright of Integrated Device Technology, Inc. All rights reserved.