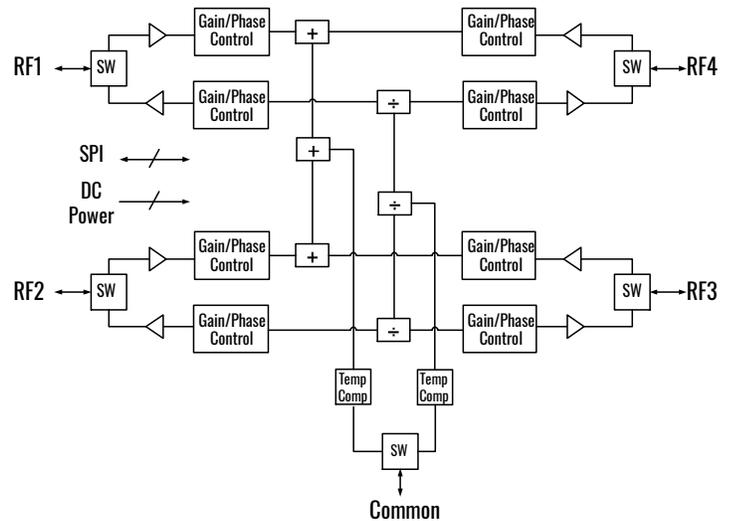


Product Features

- 24.25 – 27.5 GHz operation
- Supports 4 radiating elements
- Tx/Rx half duplex operation
- +10 dBm Tx OP1dB
- +29 dB Tx gain
- +30 dB Rx coherent gain*
- 5.0 dB Rx coherent NF
- -30 dBm Rx coherent IIP3
- 5-bit phase control (LSB=11.25°)
- 5-bit gain control (LSB=1.0 dB)
- Fast beam steering
- Telemetry reporting
- 6x6 mm QFN
- +1.8 V operation



Applications

5G communications antenna arrays

General Description

The AWMF-0135 is a highly integrated silicon quad core IC intended for 5G phased array applications. The device supports four Tx/Rx radiating elements, includes 5-bit phase and 5-bit gain control for analog RF beam steering, and operates in half duplex fashion to enable a single antenna to support both Tx and Rx operation. The device provides 29 dB gain and +10 dBm output power during transmit mode and 30 dB coherent gain, 5.0 dB NF, and -30 dBm IIP3 during receive mode. Additional features include gain compensation over temperature, temperature reporting, Tx power telemetry, and fast beam switching. The device features ESD protection on all pins, operates from +1.8 V, and is packaged in a 48 lead 6x6 mm QFN for easy installation in planar phased array antennas.



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Document: AWMF-0135-DSB
 Rev. 3

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AWMF-0135 Developer Kit

The AWMF-0135-DK includes all hardware and software required to interface to the AWMF-0135. It enables full evaluation and RF testing of the developer kit with easily defined user interfaces. The test board has been carefully designed to easily replicate the performance of the device and to provide the necessary channel to channel isolation. Calibration data is included to enable the removal of test board line losses. The SPI control is supported through a high-speed cable, interposer board, and USB interface module. Driver software is supplied to provide control from a PC. DC power is supplied to the test board through a separate cable assembly. A full set of measured data is included to provide reference performance for each Developer Kit. Evaluation of the AWMF-0135 with the Developer Kit will significantly shorten the time to become familiar with the operation and performance of the product, thereby reducing system development time and cost.

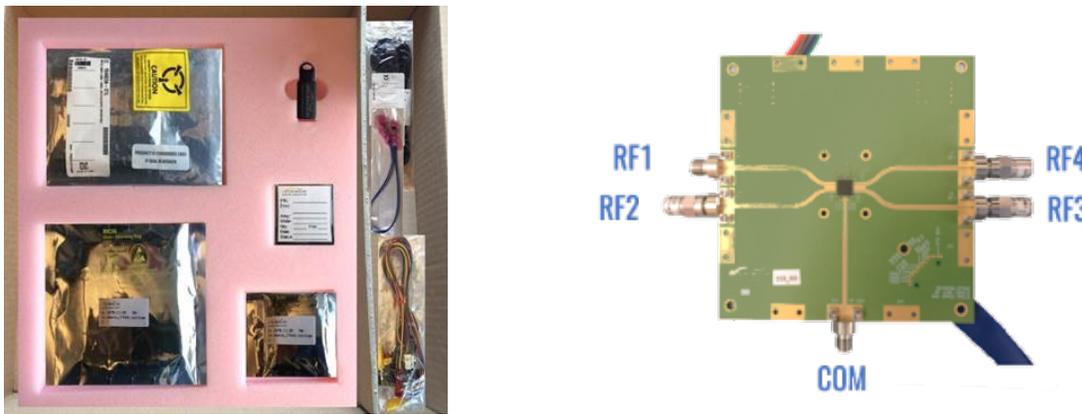


Figure 1: AWMF-0135-DK Contents and Evaluation Board

Developer Kit Contents

- 1 x Test board with 5 x RF connectors, 1 x DC connector, and 1 x SPI connector
- 1 x DC power cable assembly
- 1 x high speed SPI cable assembly
- 1 x SPI interposer board
- 1 x USB-SPI interface module
- 5 x AWMF-0135 (1 mounted on test board)
- Gerber files and engineering support (AWMF-0135-DK only)
- SPI driver software
- Control software with User Guide, full test results, and board calibration
- 1 x Software Installation and Control Software User's Guide

Ordering Guide

Model	Temperature Range	Package	MSL Rating	Package Description	Package Option	Package Marking
AWMF-0135	-40°C to +85°C	QFN		6x6 mm 48 LD QFN		AWMF-0135 00A1YYWW 01MA672M ZZZZZZZZ
AWMF-0135-DK				Developer's Kit for evaluation		