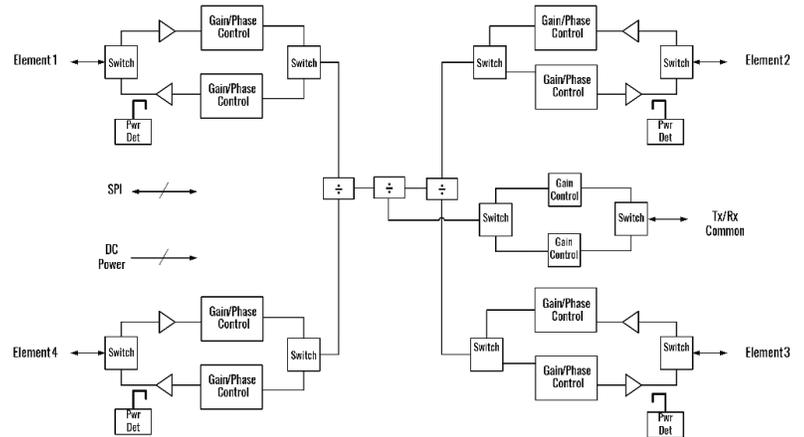


Product Features

- 26.5 – 29.5 GHz operation
- Supports 4 radiating elements
- Tx/Rx half duplex operation
- Tx output power:
 - +17dBm @ P1dB
- 25 dB Tx gain
- 30 dB Rx coherent gain
- 3.8 dB Rx coherent NF
- -25 dBm Rx coherent IIP3 (adjustable)
- 6-bit phase control (LSB=5.6 deg)
- 5-bit gain control (LSB=0.5 dB)
- Fast beam steering
- Telemetry reporting
- Single 1.8V supply operation



Applications

5G communications antenna arrays

General Description

The AWMF-0162 is a highly integrated silicon quad core IC intended for 5G phased array applications. The device supports four Tx/Rx radiating elements, includes all requisite beam steering controls for phase and gain control, and operates in half duplex fashion to enable a single antenna to support both Tx and Rx operation. The device provides 25 dB gain and +17 dBm output power during transmit mode and 30 dB coherent gain, 3.8 dB NF, and -25 dBm IIP3 during receive mode. Additional features include gain compensation over temperature, temperature reporting, Tx power telemetry, and fast beam switching using on-chip beam weight storage registers. The device features ESD protection on all pins, operates from a +1.8 V supply, and is packaged in a WLCS (wafer level chip scale package) for easy flip chip installation in planar phased array antennas.



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Document: AWMF-0162-DSB
 Rev. 3

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AWMF-0162 Developer Kit

The developer kits (AWMF-0162-DK, AWMF-0162-DL) include all hardware and software required to interface to the AWMF-0162. The kits enable 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-0162 with the Developer Kits will significantly shorten the time to become familiar with the operation and performance of the product, thereby reducing system development time and cost.

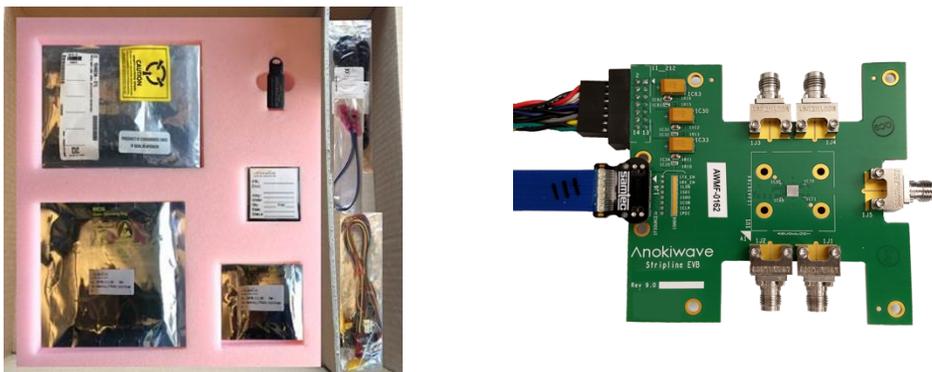


Figure 1: AWMF-0162-DK Contents and Evaluation Board

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
- 25 extra ICs (AWMF-0162-DK only)
- Gerber files and engineering support (AWMF-0162-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	Package	MSL Rating	Package Description	Package Option	Package Marking	Option
AWMF-0162	WLCSP		WLCSP		AWMF-0162 ZZZZZZZ YYWWGHIJ KLMNOP_X	
AWMF-0162-DK			Developer's Kit for evaluation (includes 25 additional ICs)			
AMSF-0162-DL			Developer's Kit Lite (without additional ICs)			