

Product Features

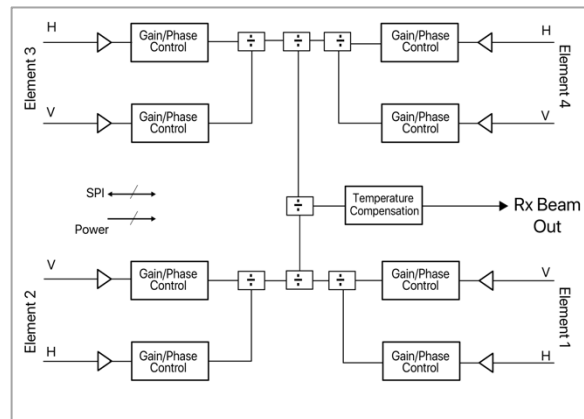
- 10.7 to 12.75 GHz operation
- Supports 4 dual pol radiating elements
- Flexible polarization (RHCP, LHCP, linear)
- 6-bit phase control
- 5-bit gain control
- Telemetry reporting
- WLCSP for simple thermal management
- 1.2V operation

New Updates

- Low noise figure eliminates the need for external LNAs
- 300 mm CMOS design for low cost
- Lower DC power than Gen 1 ICs
- Zero-Cal[®] phase/gain calibration free
- Kinetic Green[™] 3D beam steering for additional power savings

Related Parts

- See [AWMF-0147](#) for Ku band Tx beamformer IC
- See [AWMF-0197](#) or [AWMF-0198](#) for K/Ka band beamformer ICs



Description

The AWMF-0146 is a highly integrated silicon quad core IC intended for satellite communications applications. The device supports four dual polarization radiating elements with full polarization flexibility. The IC operates from a +1.2V supply and is packaged in a WLCSP (Wafer Level Chip Scale Package) for easy installation in planar phased array antennas.

The Gen-2 SATCOM IC family builds on our prior generations improving performance, reducing cost, and providing a host of digital functionality that simplifies active antenna design.

AWMF-0146 Developer Kit

The developer kits (AWMF-0146-DK, AWMF-0146-DL) include all hardware and software required to interface to the AWMF-0146. 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-0146 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.

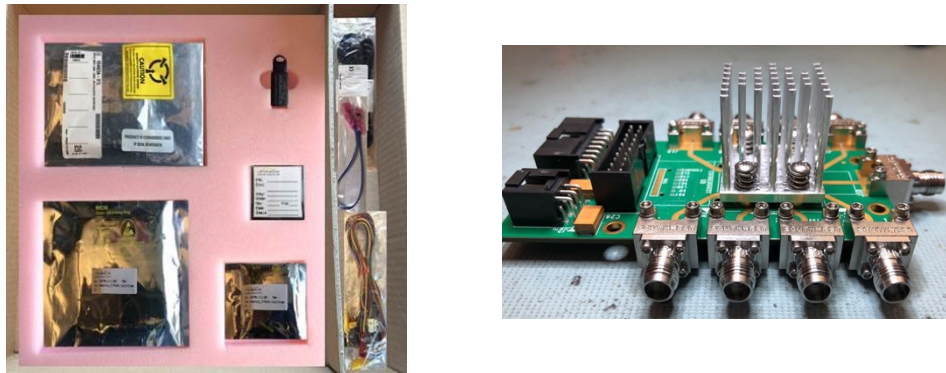


Figure 1: AWMF-0146-DK Contents and Evaluation Board

Developer Kit Contents

- 1 x Test board with 9 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-0146-DK only)
- Gerber files and engineering support (AWMF-0146-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
AWMF-0146	WLCSP	1	WLCSP		AWMF-0146 ZZZZZZZ YYWWGHIJ KLMNOP_X
AWMF-0146-DK			Developer's Kit for evaluation (includes 25 additional ICs)		
AWMF-0146-DL			Developer's Kit Lite (without additional ICs)		