

Product Features

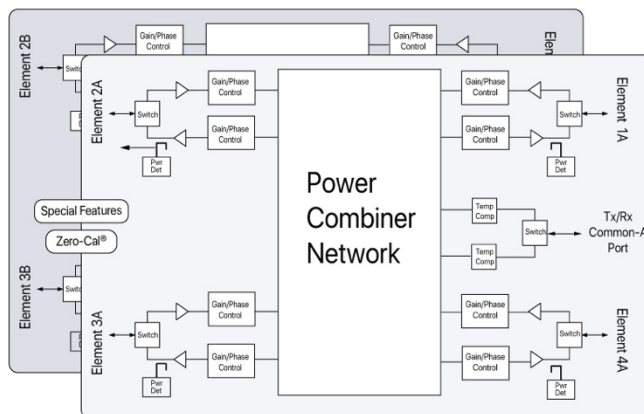
- Generation 4 IC Family
- **NEW** 24 to 30 GHz Multi-band operation (3GPP n257, n258, n261)
- Supports both 5G NR and 802.11ac/802.11ax waveforms
- **NEW** Higher linear power
- **NEW** Improved power efficiency
- 4 dual-pol or 8 single-pol antenna configuration
- Tx/Rx half duplex operation
- 6-bit phase control
- 5-bit gain control
- Telemetry reporting
- **NEW** Advanced digital features
- **NEW** FC-CSP package

New Updates

- Industry's highest power efficiency and linear power combination, to enable **greener** radios
- Fewer ICs needed for smallest form factor radios
- Automatic temperature compensation
- Zero-Cal[®] phase/gain calibration free
- Kinetic Green[™] 3D beam steering
- 3GPP compliant Fast Beam Steering[™]

Related Parts

- See [AWMF-0210](#) and [AWMF-0188](#) for 24 to 30 GHz up/down converter IC options
- See [AWMF-0224](#) for 24 to 30 GHz IF Transceiver IC
- See [AWMF-0236](#) for 37 to 43.5 GHz Beamformer option



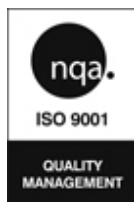
Description

The AWMF-0221 is a highly integrated silicon RF beamforming IC (BFIC) built on Anokiwave's proven quad channel, dual polarization CMOS platform.

This modular architecture delivers industry leading antenna performance across multiple end user applications with benchmark linear RF power and DC power efficiency, seamlessly supporting higher signal bandwidths and modulations as well as 802.11ac/ax Wi-Fi waveforms.

Each BFIC includes beam steering controls for compliance with all 3GPP standards. Half duplex operation with dual polarization allows a single antenna aperture per sector coverage.

The BFICs are fully compatible with the respective Anokiwave Converter IFICs, sharing common mechanical and electrical interfaces, and designed for cascade integration from IF to antenna and back.



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Document: AWMF-0221-DSB
Rev. 6

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AWMF-0221 IC Developer Kit

The developer kits (AWMF-0221-DK, AWMF-0221-DL) include all hardware and software required to interface to the AWMF-0221. 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-0221 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.

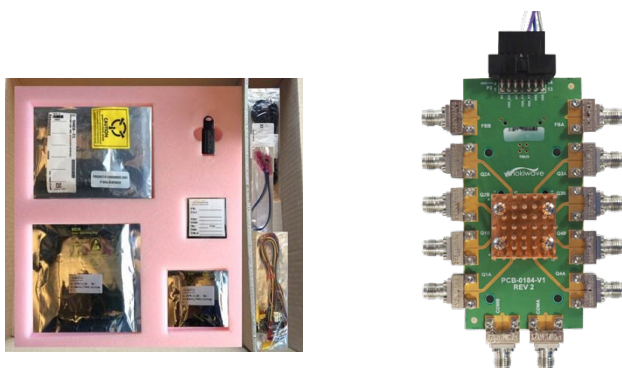


Figure 1: AWMF-0221 DK Contents and Evaluation Board

Developer Kit Contents

- 1 x Test board with 12 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-0221-DK only)
- Gerber files, PCB layout support, and Anokiwave design assistance (AWMF-0221-DK only)
- SPI driver software, 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-0221	FC-CSP	3	FC-CSP		AWMF-0221 ZZZZZZZZ ZZZZZZZZ YYWWZZZZZZ
AWMF-0221-DK			Developer's Kit for evaluation (includes 25 additional ICs)		
AWMF-0221-DL			Developer's Kit Lite (without additional ICs)		