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# Analog Devices Wiki

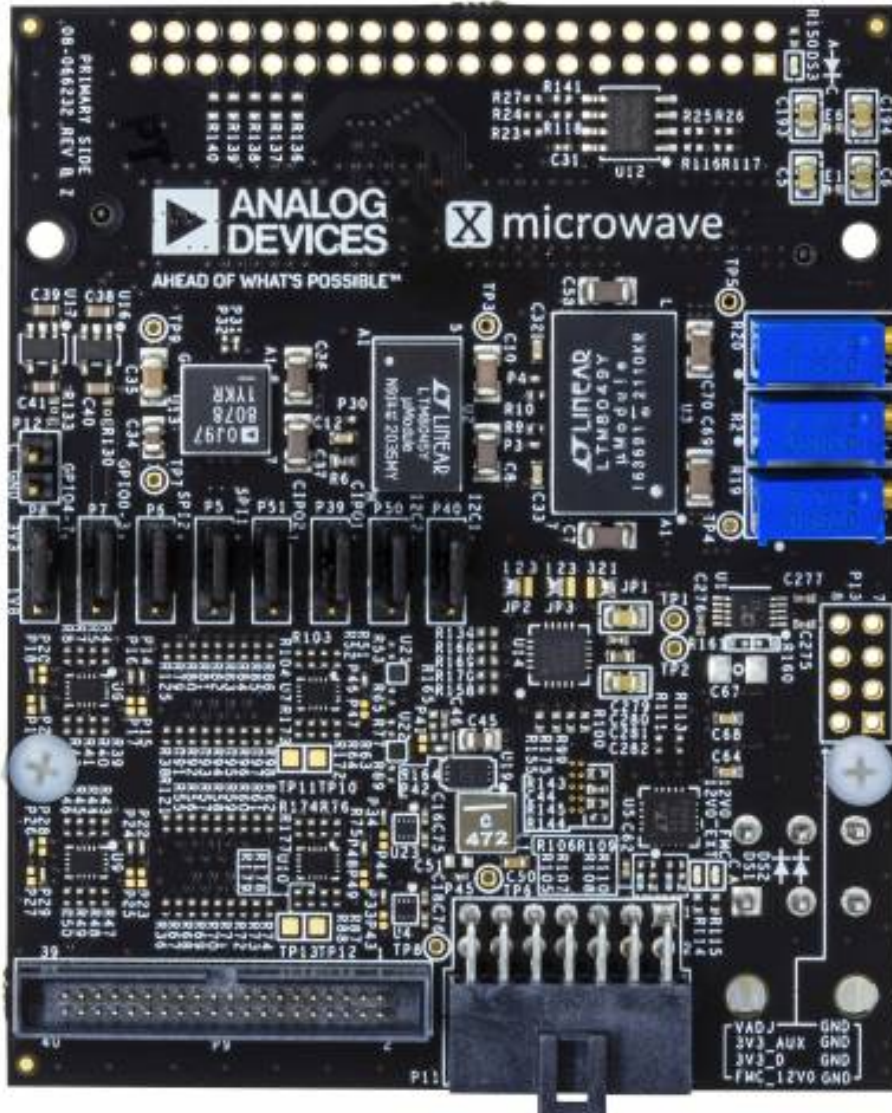
This version (16 Jun 2022 14:31) was *approved* by Pop Andrea [https://ez.analog.com/members/andrecapop].  
The Previously approved version (/resources/eval/user-guides/ad-fmcxmwr1-ebz?rev=1649426925) (08 Apr 2022 16:08) is available.

## AD-FMCXMWBR1-EBZ User Guide

### Introduction

The [AD-FMCXMWBR1-EBZ](https://www.analog.com/AD-FMCXMWBR1-EBZ) [https://www.analog.com/AD-FMCXMWBR1-EBZ] is a FMC-compatible level translator and power supply board. It provides a direct connection between a compatible controller/FPGA device and [X-Microwave](https://www.xmicrowave.com/) [https://www.xmicrowave.com/] blocks. It is powered from the FMC connector but has the option to add an external supply for applications that require higher load currents. This increases

flexibility and allows for multiple supply voltages with high current capability. These can be used to bias the X-MW blocks or other IC's in a prototype design, allowing multiple level translated digital communications paths between the controller board and the front-end.



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[guides/ad-fmcxmwb1-ebz\\_top.jpg?id=resources%3Aeval%3Auser-guides%3Aad-fmcxmwb1-ebz\)](#)

## Features

- FMC-compatible form factor
- Powered from FMC connector with external supply possibility
- Provides level translation and various supply values
- Compatible with RaspberryPi X-MW controller

## Applications

- RF and Microwave designs
- Voltage level translation
- General-purpose software radios
- Radar systems
- Point to point communication systems
- Multiple input/multiple output (MIMO) radios
- Automated test equipment

# Hardware

Hardware details and schematics of the AD-FMCXMWBR1-EBZ can be found on the [AD-FMCXMWBR1-EBZ Hardware \(/resources/eval/user-guides/ad-fmcxmwbr1-ebz/hardware\)](/resources/eval/user-guides/ad-fmcxmwbr1-ebz/hardware) page

## Kit Contents

FMC X-Microwave Bridge Kit	
FMC X-Microwave Bridge board	FMC Card with level translators and power supplies
FMC X-Microwave Protoplate board	Prototyping board with access to all signals of interest
Ribbon cable	For signal rails
Custom cable	For power rails

## Example-using ADRV9009-ZU11EG RF-SOM

AD-FMCXMWBR1-EBZ is compatible with various development platforms that have FMC/FMC+ connectors, and also with RaspberryPi. The board itself does not need a specific software design to be used, since it acts as a 'bridge' between the development platform and the setup. We developed an example on how to use the AD-FMCXMWBR1-EBZ as a bridge between the ADRV9009-ZU11EG RF-SOM and a setup of various [X-MWblocks \[https://www.xmicrowave.com/product-category/x-mwblocks/\]](https://www.xmicrowave.com/product-category/x-mwblocks/).

- [Setup Guide \(/resources/eval/user-guides/ad-fmcxmwbr1-ebz/quickstart\)](/resources/eval/user-guides/ad-fmcxmwbr1-ebz/quickstart)
- [Reference HDL Design \(/resources/eval/user-guides/ad-fmcxmwbr1-ebz/reference\\_hdl\)](/resources/eval/user-guides/ad-fmcxmwbr1-ebz/reference_hdl)
- [Software \(/resources/eval/user-guides/ad-fmcxmwbr1-ebz/software\)](/resources/eval/user-guides/ad-fmcxmwbr1-ebz/software)

Based on this example, the user can modify the software and adapt it for their specific development board and devices in the X-MW setup.

# Videos

## Controlling the X-Microwave Proto Platform with an FPGA



## Production Testing Process

More information about the testing procedure is found on [Production Testing Process \(/resources/eval/user-guides/ad-fmcxmwr1-ebz/testing\)](/resources/eval/user-guides/ad-fmcxmwr1-ebz/testing) page.

These resources can be used as a development example, showing how you can control any device that has a [linux driver \(/resources/tools-software/linux-drivers-all\)](/resources/tools-software/linux-drivers-all) and can be included in the device tree, even devices that are not embedded in X-MW block.

## Help and Support

For questions and more information please contact us on the Analog Devices Engineer Zone.

[EngineerZone \[https://ez.analog.com/\]](https://ez.analog.com/)

[\(/\\_detail/resources/fpga/xilinx/fmc/ad-fmcjesdad1-ebz/esd\\_warning.png?id=resources%3Aeval%3Auser-guides%3Aad-fmcxmwr1-ebz\)](/_detail/resources/fpga/xilinx/fmc/ad-fmcjesdad1-ebz/esd_warning.png?id=resources%3Aeval%3Auser-guides%3Aad-fmcxmwr1-ebz) All the products described on this page include [ESD \(electrostatic discharge\)](#) (electrostatic discharge) sensitive devices. Electrostatic charges as



high as  $4000V$  readily accumulate on the human body or test equipment and can discharge without detection.

Although the boards feature ESD (electrostatic discharge) protection circuitry, permanent damage may occur on devices subjected to high-energy electrostatic discharges. Therefore, proper ESD (electrostatic discharge) precautions are recommended to avoid performance degradation or loss of functionality. This includes removing static charge on external equipment, cables, or antennas

before connecting to the device.

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