

LimeSDR Mini 2.0

CS-LIME-26 RF Module

Product Overview

07/03/2025

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description

Lime Microsystems LimeSDR Mini 2.0 is a drop-in replacement for LimeSDR Mini, a hardware platform for high-performance and logic-intensive digital and RF designs. This RF module features frequency and bandwidth where the transceiver RFIC covering up to 3.8GHz frequencies with a bandwidth of 40MHz. The ECP5 FPGA offers 44k onboard programmable logic gates, ideal for projects where the user wants to perform operations on-device and ease the load on the host processor.



The Lime Microsystems LimeSDR Mini 2.0 features a compact 69.0mm x 31.4mm form factor. Two SMA connectors allow connection to standard multi-band antennas. This module is ideal for amateur digital TV broadcast, satellite ground stations, Oregon's first satellite, spectrum-scanning jammers, bit pattern generators, and digital audio broadcast.

Features

- Open, full-duplex, USB stick software-defined radio
- Compatible with the same acrylic enclosure and antennas as the original LimeSDR Mini
- Frequency and Bandwidth:
 - Lime transceiver RFIC (LMS7002), covering frequencies
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- Frequency and Bandwidth:
- Lime transceiver RFIC (LMS7002), covering frequencies up to 3.8GHz with a bandwidth of up to 40MHz
- Baseband Interface:
 - LMS7002 and FPGA for the implementation of key physical layer radio functions, including filtering, decimation, and interpolation

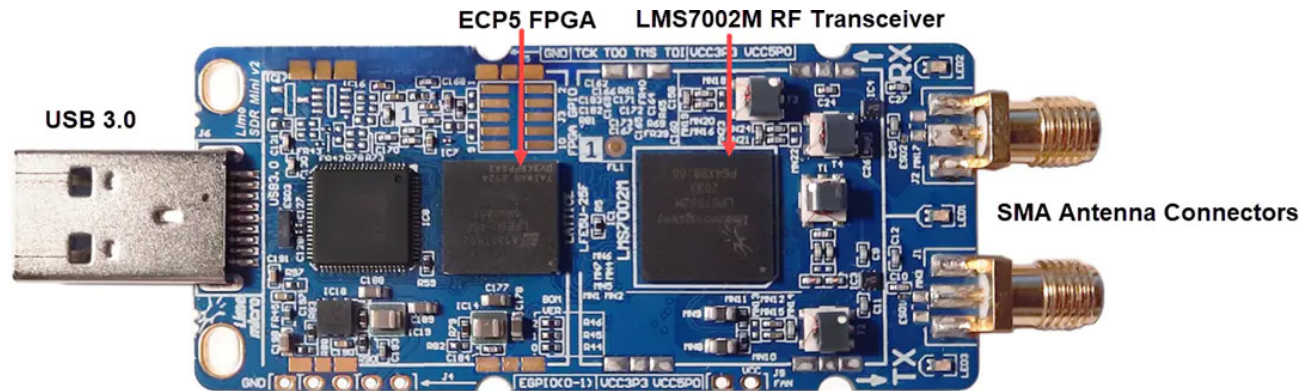
Applications

- Amateur digital TV broadcast
- Satellite ground station
- Streaming FM to the internet
- OreSat, Oregon's first satellite
- Spectrum-scanning jammer and controller for drones
- Bit pattern generator aligned with the SDR data stream
- Digital audio broadcast

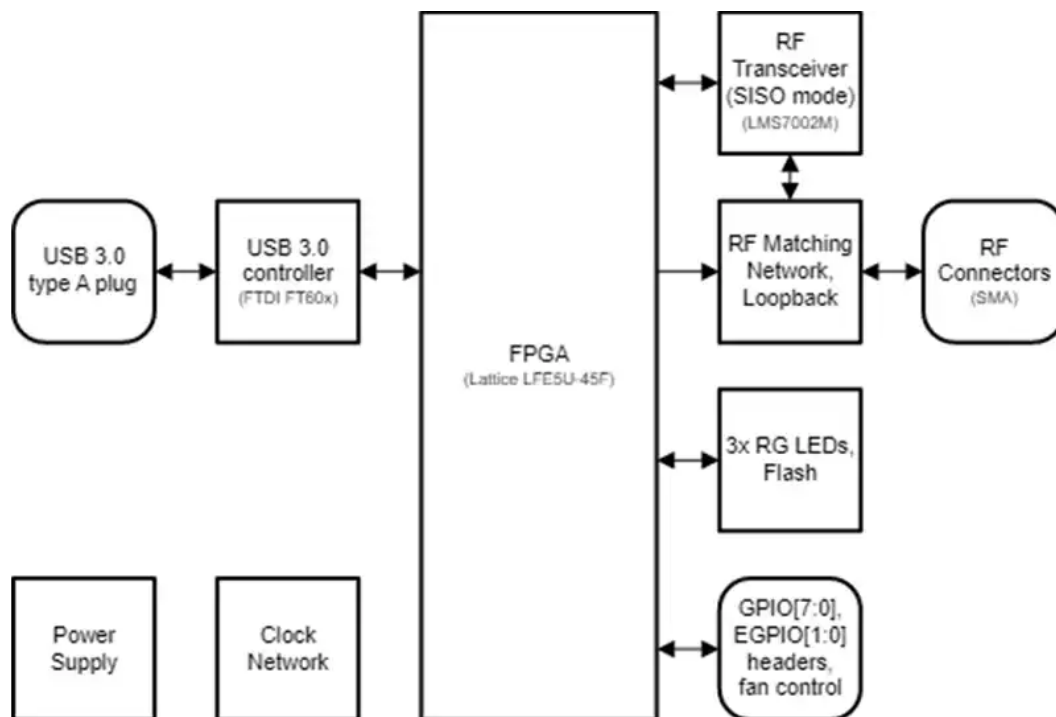
Specifications

- RF transceiver:
 - Lime Microsystems [LMS7002M](#)
 - 10MHz to 3.5GHz frequency range
 - 40MHz RF bandwidth
 - 12-bits sample depth:
 - 30.72MSPS sample rate
 - One TX channel and one RX channel
 - Full duplex
 - Transmit power of maximum
 - 10dBm (depending on frequency)
- FPGA:
 - Lattice ECP5 LFE5U-45F
 - 285-pin csfBGA package
 - 44K LUTs logic capacity
 - 108 sysMEM blocks (18Kb)
 - 1944Kb embedded memory
 - 351Kb distributed RAM
 - 72x 18x18-bit multipliers
 - 4x PLL and 4x DLL
 - 118x IO
 - FPGA configuration via JTAG
- Clock system:
 - 40MHz on board VCTCXO
 - VCTCXO can be tuned by onboard DAC
 - Reference clock input and output connectors (U.FL)
- GPIO:
 - 3x dual color (RG) LEDs
 - 8x + 2x FPGA GPIO pin headers (3.3V) (optional)
- USB 3.0 controller FTDI FT601
- LM75 temperature sensor
- Connectors:
 - USB 3.0 (type A) plug
 - Coaxial RF (SMA female) connectors
 - FPGA GPIO headers (unpopulated)
 - FPGA JTAG connector (unpopulated)
 - FAN (5V default or 3.3V) connector
- 69mm x 31.4mm dimensions
- 5V USB connector

Board Layout



Block Diagram



On the Board

- [Lime Microsystems LMS7002M FPRF Transceiver ICs](#)
- [Lattice Semiconductor ECP5 Family FPGAs](#)

Launched On

CROWD **SUPPLY**

[LimeSDR Mini 2.0](#) launched on Crowd Supply in 03/2022

Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/lime-microsystems/limemicro-sdr-mini-2-usb-radio/>