

# NI Ettus USRP X420

## Wide Bandwidth, LO Sharing, and High Frequency Coverage for FR3, Ku, and X Bands

The NI Ettus USRP X420 is a high-performance software-defined radio for advanced wireless research, radar prototyping, and satellite communications. It offers 2 transmit and 2 receive channels with frequency coverage from 10 MHz to 20 GHz and up to 1 GHz instantaneous bandwidth. This bandwidth enables high-resolution localization for applications like joint communication and sensing. Built on the AMD Zynq™ UltraScale+™ RFSoc, the X420 includes a programmable FPGA for real-time signal processing. Each channel supports LO sharing, making it ideal for multi-channel phase-coherent systems.

### Why Choose the NI Ettus USRP X420?

- Prototype radar, satellite communications, or non-terrestrial networks (NTN) for 6G at frequencies up to 20 GHz
- Create multi-channel phase coherent systems with built-in LO sharing capabilities and <1 degree RMS
- Process data in real time with a large on-board programmable FPGA
- Synchronize multiple radios with a built in GPSDO or 10 MHz and PPS inputs
- The open-source UHD driver lets you choose the software that works best for you



### Technical Specifications

PARAMETERS	NI Ettus USRP X420
<b>Frequency Range</b>	10 MHz to 20 GHz
<b>Bandwidth</b>	Up to 1 GHz per channel
<b>Number of Channels</b>	2 Transmit (via TX/RX port) 2 Receive (via TX/RX or RX2 port)
<b>Synchronization</b>	Onboard GPSDO, 10 MHz and PPS reference Trigger In/Out interface LO In and LO Out
<b>Control</b>	2 HDMI GPIO Interfaces Type C USB port (serial console, JTAG)
<b>FPGA</b>	AMD Zynq Ultrascale+ RFSOC ZU28DR
<b>Interface</b>	Dual 100GbE or Quad 10GbE via QSFP28 1GbE via RJ45

### Software Specifications

PARAMETERS	DETAILS
<b>Development Tools</b>	UHD, RF NoCGNU Radio, Python, C/C++, LabVIEW
<b>Software Compatibility</b>	UHD Driver (open source)



Visit [ni.com/usrp](https://ni.com/usrp) to get more information on NI's software-defined radios