

M.2 embedded SDR with 6 RX / 4 TX channels with up to 12 GHz frequency range.

An M.2 advanced direct-sampling SDR with phase-coherent 6 RX and 4 TX channels. The direct sampling architecture eliminates RX/TX LO leakage and RX/TX IQ imbalance problems, providing better overall linearity, superior phase noise performance, smaller design, and more flexible implementation.

FPGA

AMD Artix UltraScale+ XCAU15P
AMD Kintex UltraScale+ XCKU5P

EXTENDED POWER SUPPLY RANGE

2.85 - 5.5 V

POWER CONSUMPTION

6-15W Typical (depending on the number of active channels and bandwidth)
20W Max

EXTERNAL CLOCK SYNCHRONIZATION

Synchronize multiple boards for a massive MIMO array

HOST INTERFACE

M.2 3080 M key PCIe 4.0 x4 (with debug USB2 interface)
100GbE option (for XCKU5P only)

SAMPLE RATE

0.1MSps - 500 MSps (up to 1GSps on request)

CHANNEL BANDWITH

0.5Mhz - 500 MHz (up to 1Ghz on request)

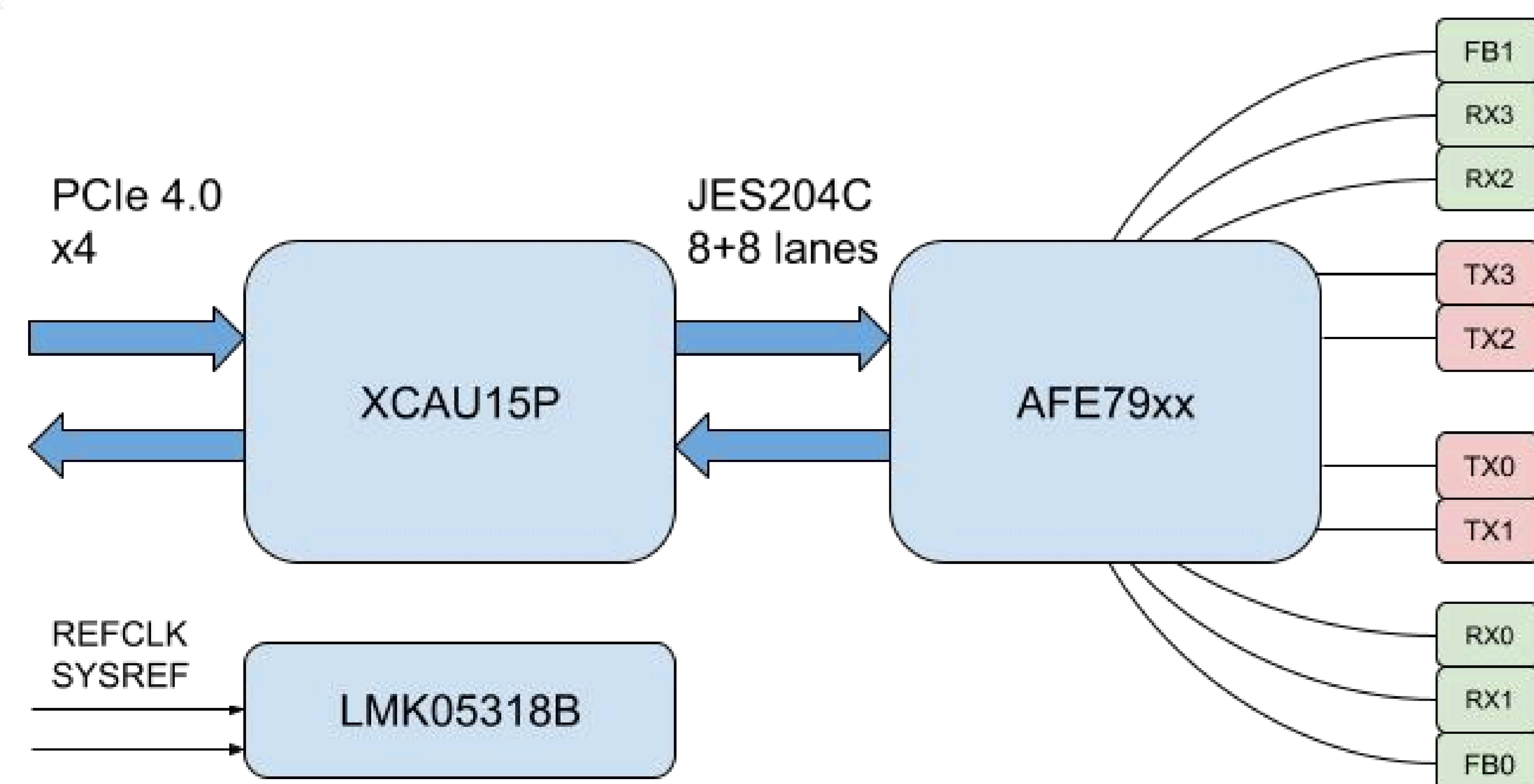
RF SPECIFICATION

RFIC (OPTIONS)

AFE7900/AFE7901/AFE7950

FREQUENCY RANGE

Model	AFE	FPGA	Frequencies	100GbE	PCIe	RX	TX
1B03	7903	XCAU10P	10-7400	-	4.0	2	2
1A01	7901	XCAU15P	10-7400	-	4.0	4	4
1A00	7900	XCAU15P	10-7400	-	4.0	6	4
1A50	7950	XCAU15P	600-12000	-	4.0	6	4
1K50	7950	XCKU5P	600-12000	+	3.0	6	4



TARGET APPLICATIONS

CELLULAR COMMUNICATION

Enables next-generation 5G/6G wireless networks with high-order massive MIMO, fully compatible with Amarisoft and srsRAN

EMBEDDED

Develop compact and high-performance frequency analysis devices

DATA LINK

Build a communication channel between points worldwide via a web platform

MASSIVE MIMO RADIO LINK

With the dMASS synchronization board, it's easy to build 32x32, 64x64, and larger MIMO systems.

DRIVER AND HOST LIBRARIES

PCIe driver is specially developed for high-speed, low-latency communication, involving mostly interaction in user space with the ability to bypass kernel access. GPUDirect support is in progress.

LEGACY SOFTWARE

SoapySDR, GNU Radio, GPUDirect, TouchSIG, srsRAN

