BittWare
a molex company

35 GHz Up/Down Conversion

Build Option for BittWare RFX Cards

Preliminary Product Info

BittWare's newer RFSoC products offer an integrated, on-card build option to **include up and down conversion to frequencies as high as 35 GHz**. BittWare will collaborate with every customer to find the right collection of filters and amplifier chips that best fits their frequency plan, while keeping the original BittWare circuit design and printed circuit board (minimum order quantities apply).

BittWare can integrate the signal path from the customer's LNA at the antenna, through the transition to digital packets including the FFT. This integration **improves performance and reduces overall cost,** compared to wiring together a collection of third-party mixers, filters, and amplifiers.

BittWare will also offer the latest Versal RF with 4 GHz of bandwidth (instead of 2.5) and DirectRF up to 18 GHz (instead of 6). Our supplemental up and down conversion circuit for Versal RF will minimize filtering and improve image and spurious suppression. However, Versal RF solutions are further out in time and at a higher price point.

Contact Bittware sales to arrange a dialog with a BittWare RF engineer to discuss your specific frequency plan.

Local Oscillator

BittWare's design utilizes two LMX PLL chips between four ADC channels. This phase locks the ADC and DAC channels in phase with each other.

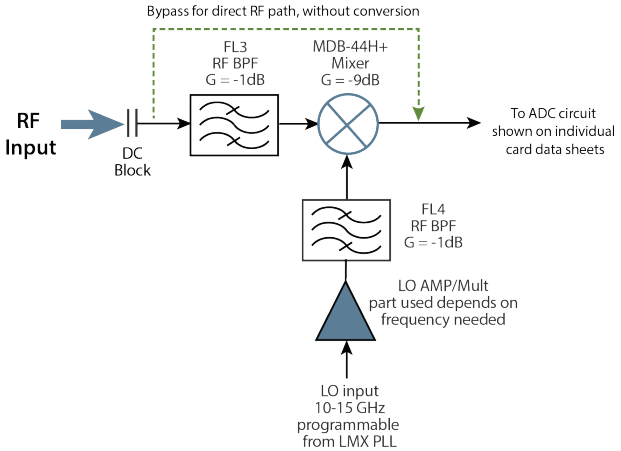
ADC Bandwidth

The RFSoC offers 2.5 GHz bandwidth, but aliasing issues can limit that to 2 GHz. For each channel, component choices and PLL programming allow customers to move the 2 GHz bandwidth window anywhere from 500 MHz to 35 GHz.

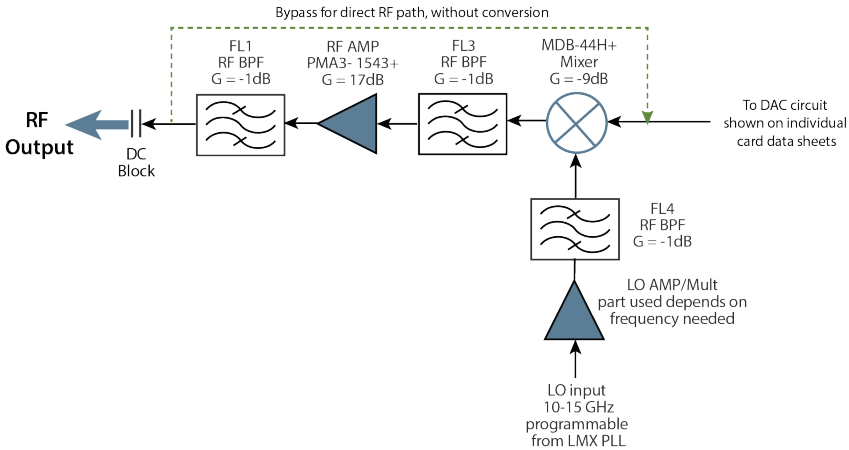
Build Option

The mixer components are located on the rear side of BittWare cards, just under the components used for the direct RF path. If the mixer is installed and enabled, the direct RF path becomes the card's IF path.

Mixer on ADC Channels (Down Conversion)



Mixer on DAC Channels (Up Conversion)



To learn more, visit **www.BittWare.com**

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