# AixSolve *DirectSyntheses Megafunction*

With the AixSolve *DirectSyntheses* megafunction it is possible to upconvert directly from IQ into the final band, whereby all modulators are independent in carrier frequency and symbol rate.

Block diagram:
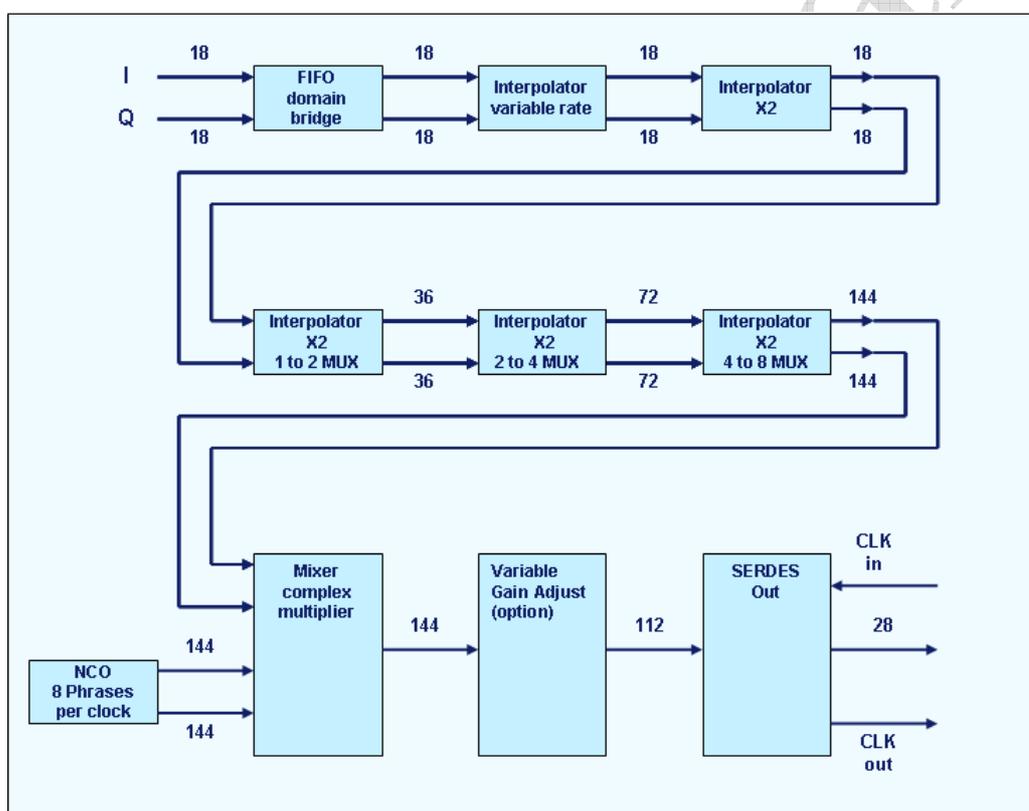
Required resources*:

Altera	Combined ALUTs*	Memory ALUTs*	ALM*	Dedicated Logic Registers*	Combinational Logic*	M9K*	M144K*	DSP*
1x UpConverter	3361	238	3419	5545	514	2	4	164
8x UpConverter	24001	1336	23554	39358	2313	344	12	484

* Based on Stratix IV, Arria2GX similar, actual synthesis might vary, project depended

Key facts	• Direct Up Conversion into the CAT-TV typical range of 50…900 MHz • Higher carrier frequencies possible by using 2nd/3rd Nyquist zones • More than 8 channels for non broadcast quality like inhouse distribution or hotel applications • Modulators are independent regarding carrier frequency and symbol rate • All IQ based modulation schemes could be supported • Example (QAM 64) : MER > 46, SNR > 60

Related AixSolve product:

AixSolve *DirectUpRef* reference design
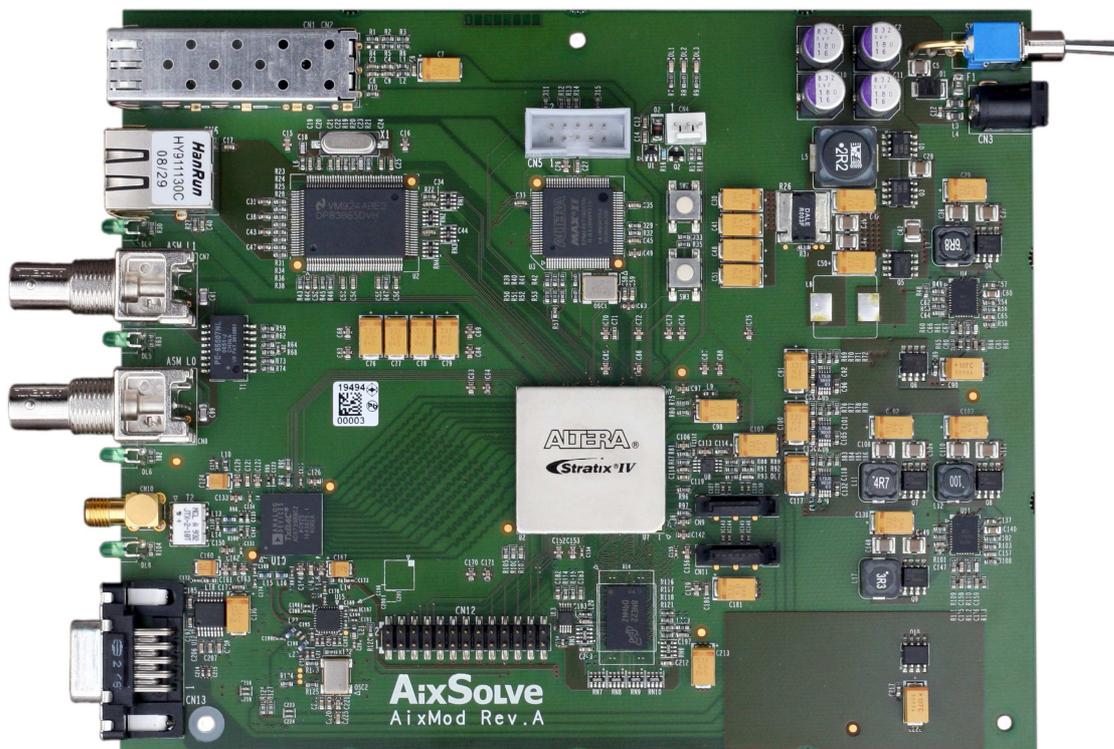
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