This work proposes a method to reduce wideband phase noise by introducing delay differences in local oscillator (LO) paths across multiple receiver paths. This arrangement introduces delay differences in the phase noise of the signal paths without delaying the original data. When the paths are combined at the baseband, the method can produce nulls in the effective phase noise spectrum, thus reducing the overall integrated phase noise. Experimental results at 150 GHz with 64-QAM over 1 GHz bandwidth show reduced phase noise and improved EVM.