

Fast, clean synthesizers

New emerging digital communications system architectures (frequency agile TDD communication systems, fast FHSS) and frequency agile coherent Radar designs are putting more and more pressure on the design of synthesizers.



Low phase noise, spurious and fast switching speed are important features of a synthesizer, but optimizing for one often leads to deterioration of the others.

Plextek has tackled the problem with innovative design, involving a combination of both digital and analogue pre-steering techniques. This has helped to significantly reduce the settling time of synthesizers to a few microseconds without compromising the phase noise of the signal and has enabled Plextek to design some truly exceptional low phase noise and ultra fast synthesizers covering VHF through to the millimetre wave bands.



Broadband Access Node

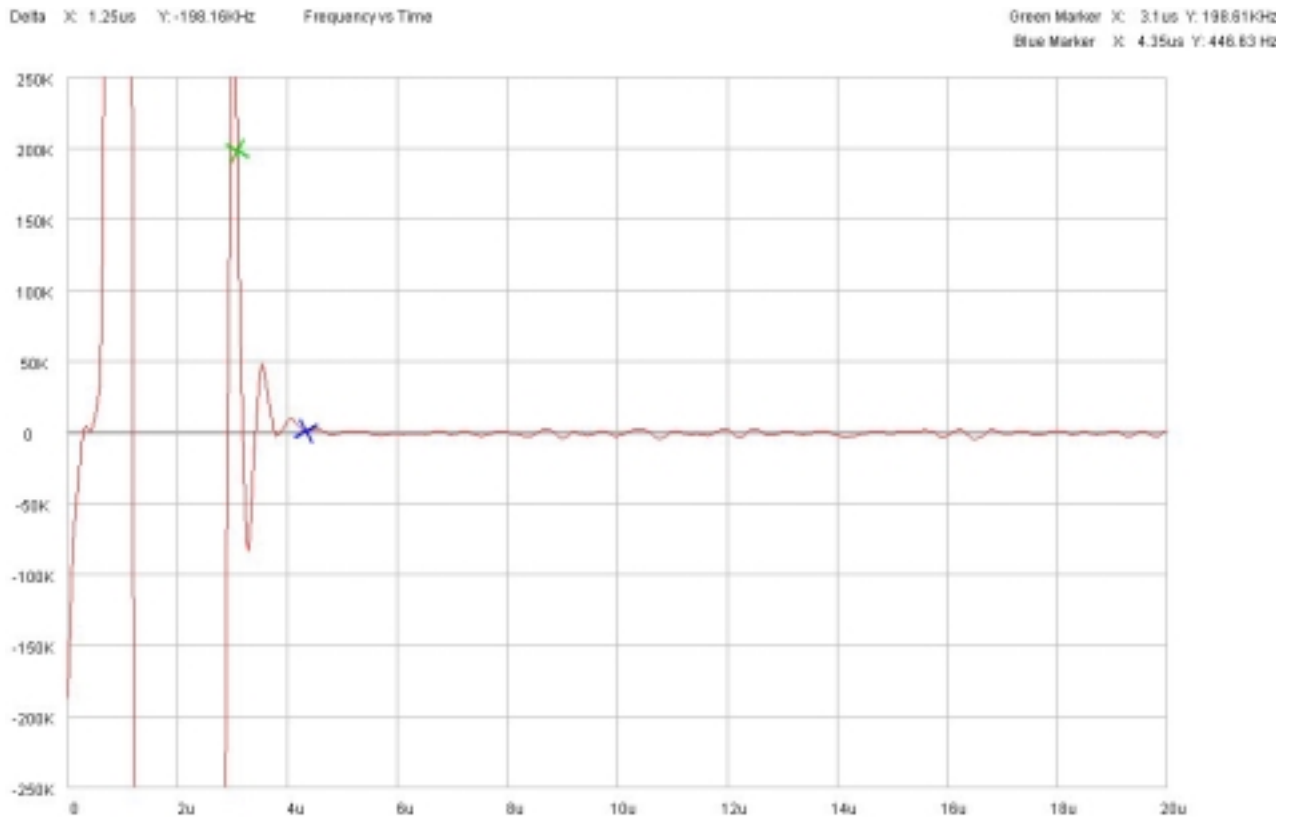


Ground Based Radar

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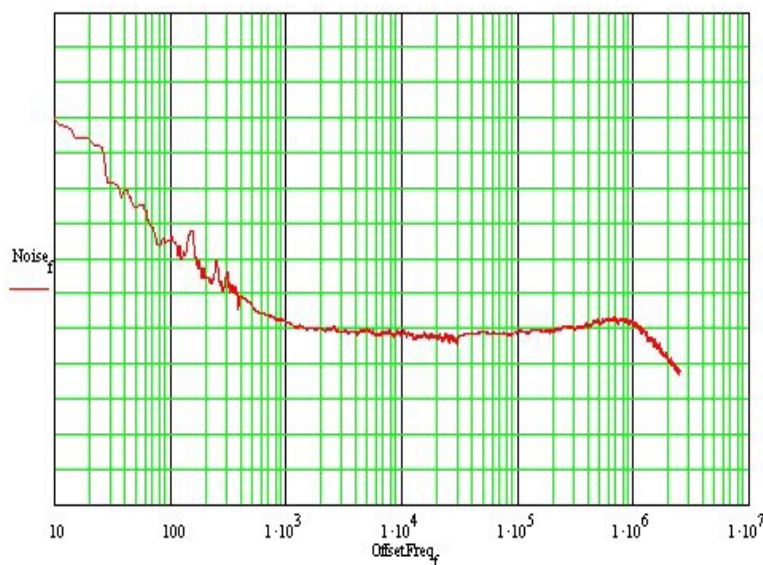
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Response measured on Plextek's settling time analyser

Shown above and below are typical results of settling time and phase noise, obtained from a fast X-band synthesizer designed at Plextek.



Response measured on Plextek's phase noise analyser

Plextek can undertake the design of high performance synthesizers using a variety of different architectures for commercial and military systems, meeting the more stringent phase noise, settling time and spurious output requirements.

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