Part II-6

Extension of LSNA to 20 GHz Bandwidth for UWB

Select $f_{SRD}$ for each input tone $i$ such that after downconversion in the 10 MHz bandwidth:

$$0 < f_{IF(i)} = f_{RF(i)} - m(i) f_{SRD} < 10 \text{ MHz}$$

no overlap of the frequencies $f_{IF(i)}$ occurs.

- Present ADCs permit to resolve 10,000 RF tones with 100 Hz resolution.
- 280 MHz bandwidth was demonstrated at ARFTG63 Dec. 2003.
- New broadband calibration needed
Signals at the LSNA ADCs

Spectrum after analog sampling

Spectrum

Output after analog sampling and filtering

Time-domain

5% Duty Rate

1% Duty Rate
UWB Architecture

Need for a 2\textsuperscript{nd} FracN oscillator