

# THE FREQUENCY-BAND SHIFTER

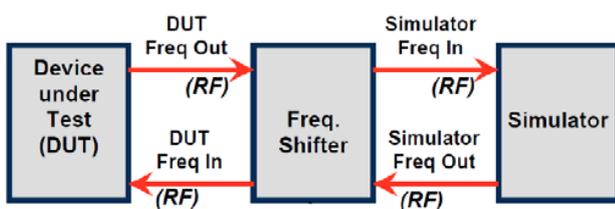
The traditional engineering response to testing a wireless standard often involves selecting a box instrument with the closest specifications.

The RF frequencies of transmitting equipment are regulated by national governments and are different between global regions. Normally this requires different type of versions of a specific product for different markets. For test systems with multiple test requirements, this often results in a different box for each measurement requirement.

When the test requirements are uniform and not changing, this method may be sufficient, but it becomes cumbersome, and ultimately more expensive for testing RF devices.

## THE SHIFTER APPROACH

Prevas Frequency Shifter recognizes the need for a dynamic setting of the frequencies. The example below shows a two-path set up, and how the Frequency-band shifter is placed in-between the base station (DUT) and the simulator.



The architecture of the Frequency-band Shifter enables support for MIMO etc, with support for simultaneously shifting an unlimited amount of paths, all locked to the same reference.

## APPLICATION AREAS

The Frequency-band Shifter is primarily used in two areas of the communication industry;

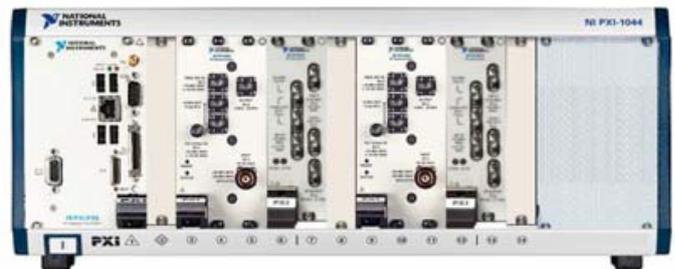
- The design phase of RF communication equipment, like base-stations.
- Field test and validation of networks.

## PROS RELATED TO ALTERNATIVE SOLUTIONS

The Frequency-band Shifter offers massive cost reductions when used in test-solutions based on traditional simulators, like Aeroflex® TM 500, and unparalleled performance related to phase-noise and spurious, if compared with build-it-yourself solutions. Last but not least, the solution saves a lot of space compared to similar functionality.

## SYSTEM DESCRIPTION

- PXI with 2 uplink and 2 downlink converters from National Instruments.
- LO tuning of the down converter in order to optimize the system performance.
- LabVIEW application with a GUI and remote control (Ethernet) with frequency preset.



For more information visit:

[www.prevas.com/frequency\\_shifter.html](http://www.prevas.com/frequency_shifter.html)

or contact us by email at [sales.ni.modules@prevas.com](mailto:sales.ni.modules@prevas.com)

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