Vector Signal Analyzer: Testing a QPSK Transmitter on Hewlett Packard 89440A*

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Abstract

You will configure a Hewlett Packard 89440A Vector Signal Analyzer (VSA) to display a quadrature phase shift keying (QPSK) constellation or a signal spectrum.

1 Introduction

The **vector signal analyzer** (**VSA**) is an instrument capable of demodulating digital signals. You may use the VSA to demodulate a QPSK signal and display the symbol constellation. The VSA will also display the signal spectrum.

Plug the output from the DSP board into the "Channel 1" jack on the front of the vector signal analyzer and turn on the analyzer. The next two sections explain how to set up the VSA to display the constellation or the signal spectrum.

1.1 Displaying the constellation

To display your QPSK constellation, enter the following key sequence:

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- "`Freq`" button, followed by F1 (center), 11.025 (on the keypad), and F3 (KHz)
- F2 (span), 22, and F3 (KHz)
- "`Range`," then F5 (ch1 autorange up/down)
- "`Instrument Mode`," then F3 (demodulation)

1.2 Displaying the signal spectrum

The VSA is capable of displaying the spectrum of a signal. Connect the output of your transmitter output to the VSA. Enter "`Instrument Mode`" and then F1 (Scalar) to see the spectrum.