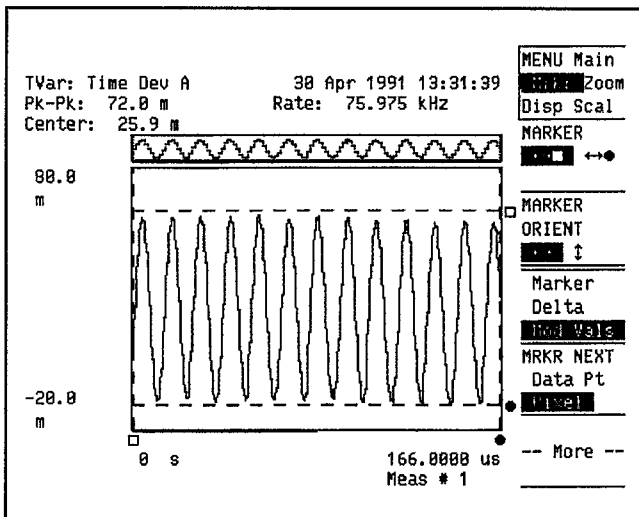


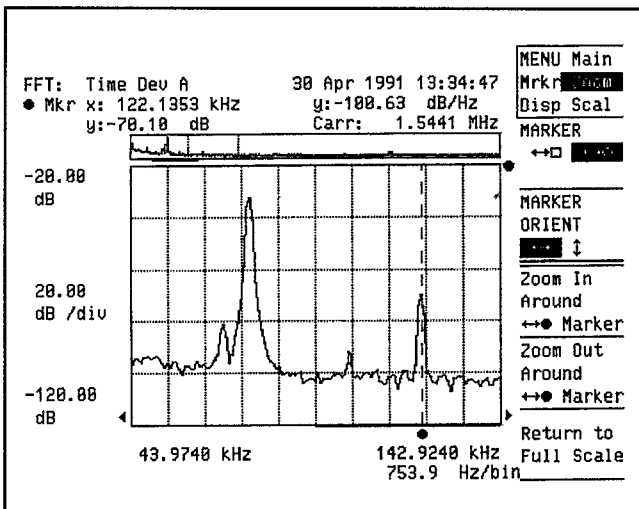
Flexible Jitter Spectrum Analysis for Digital Communications

The HP 5371A and HP 5372A frequency and time-interval analyzers can be used to characterize jitter or phase noise in digital communications, oscillators, and other serial data systems. The HP 5371A measures and displays the variations of period jitter with time or in a histogram. The HP 5372A adds the capability to display jitter as the variation of the significant instants from the ideal timing position (the time deviation function).

With the new Jitter Spectrum Analysis feature (Option 040) of the HP 5372A, jitter spectrum measurements are possible with higher resolution than current jitter test sets. Any clock rate, including nonstandard rates, can be accommodated or measurements made without the presence of a clock. The jitter bandwidth can exceed 2 MHz. The Jitter Spectrum Analysis option is ideal for characterizing the phase noise performance of low-cost oscillators and synthesizers. This new option of the HP 5372A eliminates the need for an external computer for analysis.



Jitter as a function of time. A strong periodic component is shown in this jitter vs. time graph. The rate of the jitter and the peak-to-peak jitter are displayed in Unit Intervals.



The jitter spectrum shows the large component of jitter as well as a smaller spur. The HP 5372A Jitter Spectrum Analysis (Option 040) enables the viewing of all components of jitter.

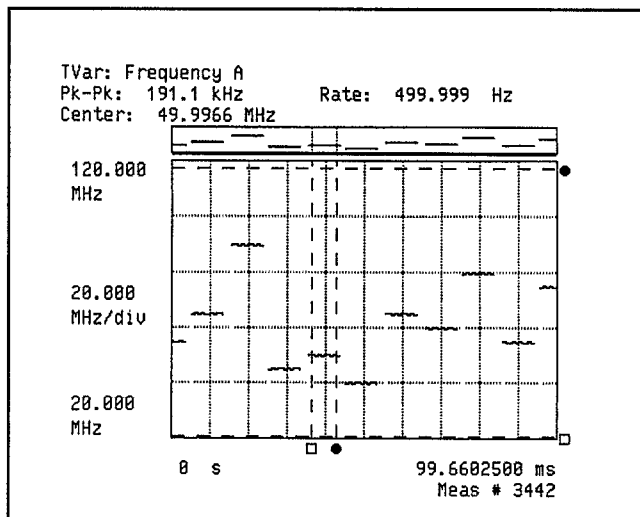
A Clear Picture of Agile Signals

Characterization of agile transmitters is difficult in the time or frequency domains. Pseudo-random selection of the carrier means repetitive techniques are inadequate to properly characterize an agile radio's performance. "Golden receiver" or back-to-back testing, where transmitters and receivers are tested in pairs, yield little quantitative information about the radio's performance.

The modulation domain provides a clear view of these agile signals. Parameters such as dwell time, hop rate, and carrier settling time can be obtained from the graphic display. Modulation parameters such as peak-to-peak deviation, center frequency, and modulation rate can be easily displayed.

A histogram of frequencies is a clear measure of random usage of the frequency spectrum. Flat histogram characteristics indicate when channels are used with equal probability, providing the highest resistance to jamming and communication security.

- Direct frequency vs. time profiles of agile signals
- Characterize switching time, settling time, and hopping rate
- Examine modulation on agile carriers



In addition to dwell time and hop sequence, the modulation characteristics on the agile carrier can easily be examined using the HP 5373A time variation graph.