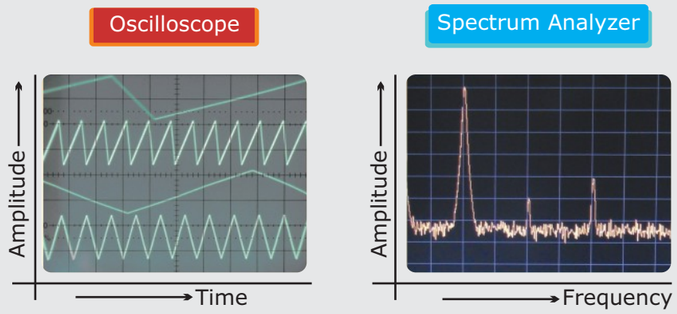
Tesca Technologies Pvt. Ltd.

Know Your Spectrum Analyzer

What is a Spectrum Analyzer ?

As you know that Oscilloscope is a Time Domain Signal Analyzer similarly Spectrum Analyzer is a Frequency Domain Analyzer.

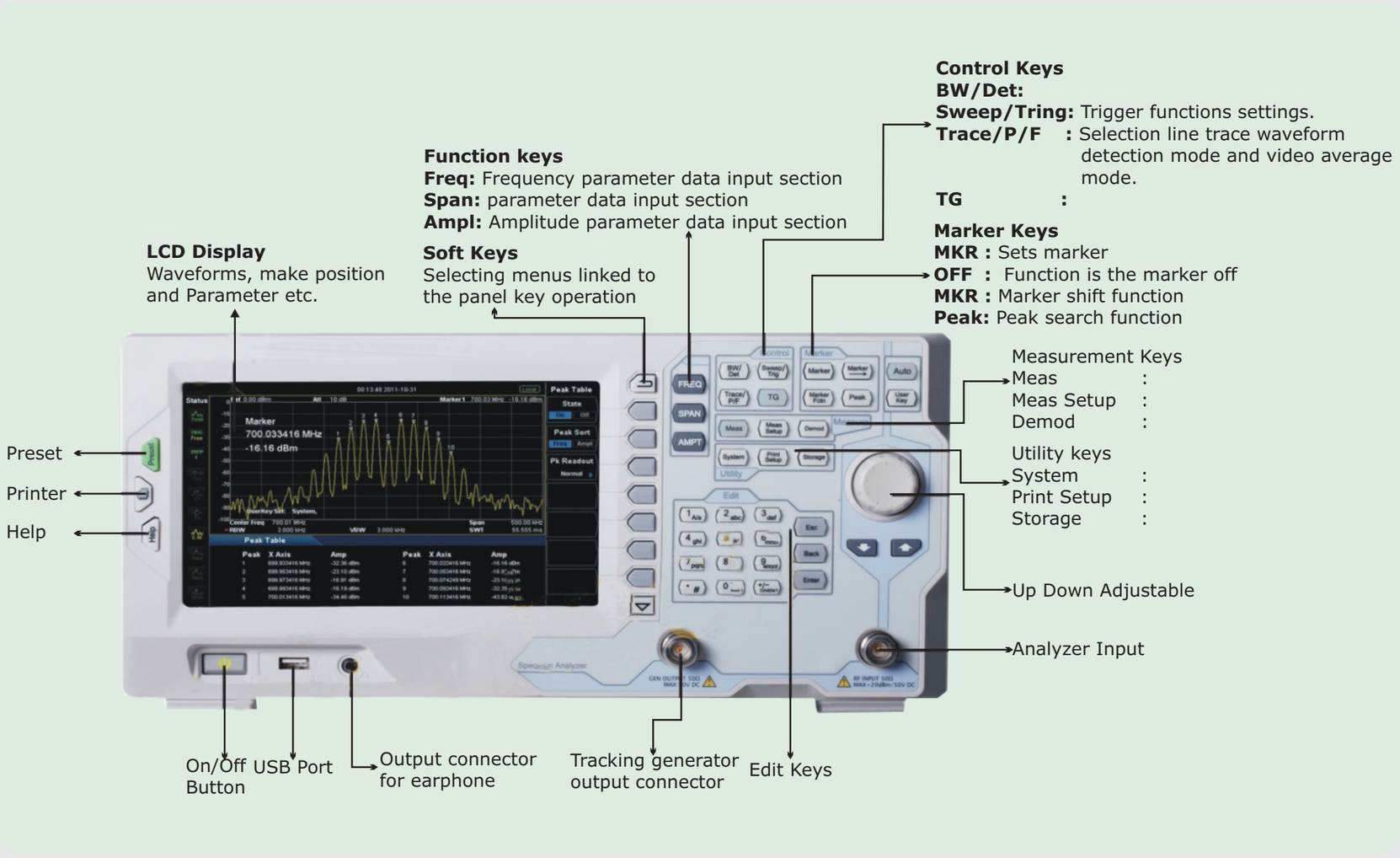
The Spectrum Analyzer utilizes a swept Tuned Hetrodyne Receiver which has frequency conversion property and displays the Frequency Vs Amplitude plot.



Thus a Spectrum Analyzer examines the frequency Spectrum Composition of the Waveform.

Measurements with Spectrum Analyzer

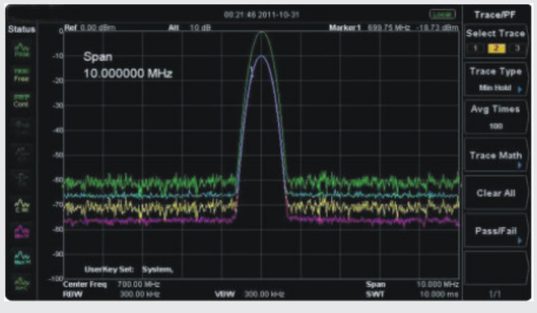
- Absolute and Relative Frequency
- Absolute and Relative Amplitude
- Spurious and Phase Noise
- EM/EMC Testing
- Frequency Responses and Spectrum Monitoring
- Fault locations
- Modulation Analysis
- Measurement of RF Spectrum (Channel Power, etc)
- Mobile, Radio & Wireless Communication applications



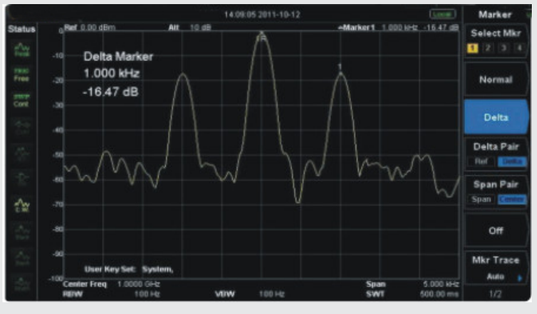
Types of Spectrum Analyzers

There are Analog and Digital Spectrum Analyzers:

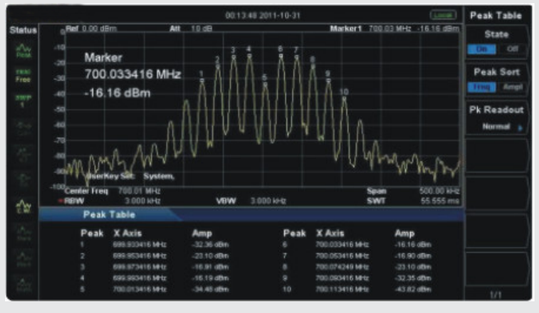
- A analog Spectrum Analyzer either a variable band pass filter whose mid-frequency is automatically tuned through the range of frequencies of which the spectrum is to be measured, or a superheterodyne receiver where the local oscillator is swept through a range of frequencies.
- A digital Spectrum Analyzer computes the Discrete Fourier Transform (DFT), a mathematical process that transforms waveform into the components of its frequency spectrum.



Compare the spectrums when change the RBW settings with different color trace



Distinguish the two nearby signals clearly with the 100Hz RBW



Readout the Spectrum Peak values with the Peak table function

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