Had a question about VNA's that are available for under a hundred dollars.

What are they and what can I use it for?

Vector, having direction magnitude and phase; network, a collection of components that manipulate AC (RF) signals considering frequency response, phase response, and direction; Analyzer, a mathematical reduction of complex numbers in to a graphical form

What are they and what can I use it for?

These Chinese devices have poor accuracy and precision, however, they can give relative indications of transmission line response and inductor and capacitance circuits to their performance by frequency. They can indicate SWR, Impedance and mismatch, frequency response of transmission lines. From that they can give a rough representation of a smith chart.

https://www.microwaves101.com/encyclopedias/smith-chart-basics

http://www.antenna-theory.com/tutorial/smith/chart.php

They are touted as the holy grail but if you don't know how to use them and are not building equipment, they are a toy that will find it's way to the junk drawer.

They are an 'S' port device some uni-directional some bi-directional.

https://www.electronics-notes.com/articles/test-methods/rf-vector-network-analyzer-vna/what-is-a-vna.php

- ***Scalar network analyzer (SNA):*** The scalar network analyzer, SNA is a form of RF network analyzer that only measures the amplitude properties of the device under test - i.e. its scalar properties. In view of this it is the simpler of the various types of analyer.

  Scalar, (of a quantity) having only magnitude, not direction, dimension X and Y

- ***Vector network analyzer (VNA):*** The VNA network analyzer is a more useful form of RF network analyzer than the SNA as it is able to measure more parameters about the device under test. Not only does the it measure the amplitude response, but it also looks at the phase as well. As a result VNA network analyzer may also be called a gain-phase meter or an Automatic Network Analyzer.

  Vector, a quantity having direction as well as magnitude, especially as determining the position of one point in space relative to another. Typically X, Y, Z, It is primarily tests passive (unpowered) devices.

- ***Large Signal Network Analyzer (LSNA):*** The large signal network analyzer, LSNA is a highly specialised for of RF network analyser that is able to investigate the characteristics of devices under large signal conditions. It is able to look at the harmonics and non-linearities of a network under these conditions, providing a full analysis of its operation. A previous version of the Large Signal Network Analyser, LSNA was known as the Microwave Transition Analyzer, MTA.

LSNA tests active (powered) devices such as amplifiers modulators in 4 dimensions, X, Y, Z and time.