Useful links and other resources

Vector Network Analyzers are complex instruments which means just reading the instruction manual will not tell you sufficent on how to use them. Here are listed a number of:

- Application notes - these are free
- Books
- Ph.D. theses These are not always too easy to find online
- Scientific papers - some of these are free, but some need payment to a journal, although most universities pay for such subscriptions
- Standards

Application notes

The best single source of application notes vector network analyzers is those from Agilent, though there are other useful application notes from Maury Microwave, Anritsu, Rohde & schwarz etc. He is a partial list of the most useful application notes:

Agilent / HP

1. Understanding the Fundamental Principles of Vector Network Analysis.
2. 10 Hints for Making Better Network Analyzer Measurements. Application Note 1291-1B
3. Specifying Calibration Standards for the Agilent 8510 Network Analyzer. Application note 8510-5B. Despite the fact the 8510 series are obsolete, this application note is very informative.
4. Time Domain Analysis Using a Network Analyzer Application Note 1287-12
5. Simplified Filter Tuning Using Time Domain Application Note AN 1287-8
6. Network Analysis Solutions Advanced Filter Tuning Using Time Domain Transforms Application Note 5980-2785EN
7. Understanding and Improving Network Analyzer Dynamic Range. Application Note 1363-1. Describes two quite common, but different ways of defining dynamic range. One is the system dynamic range, the other the receiver dynamic range.
8. Improving Throughput in Network Analyzer Applications. AN 1287-5
9. Applying Error Correction to Network Analyzer Measurements Application Note AN 1287-3
10. Network Analysis Applying the 8510 TRL Calibration for Non-Coaxial Measurements. Product Note 8510-8A
11. Calibration Kit Definitions

Anritsu

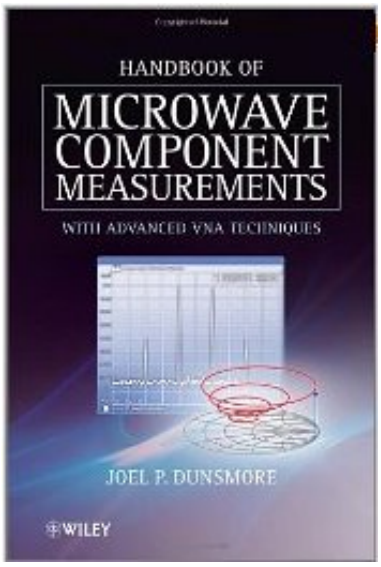
1. Vector Network Analyzer Primer.
2. Understanding Vector Network Analysis

Rohde & Schwarz

1. T-Check Accuracy Test for Vector Network Analyzers utilizing a Tee-junction
2. Frequently Asked Questions about Vector Network Analyzer ZVR. Application Note 1EZ38_3E. This covers the ZVR ZVRE & ZVRL products.

Books

I would also reccommend the book Handbook of Microwave Component Measurements: with Advanced VNA Techniques by Dr. Joel Dunsmore, who works for Agilent on the development of VNA.



Ph.D. theses

1. Dunsmore, Joel Phillip., The time-domain response of coupled-resonator filters with applications to tuning, PhD Thesis, University of Leeds, 2004.
2. Philip G. Bartley, Jr.,Characterization and calibation of an arbitrarily shaped permittivity measurement probe

Scientific papers

1. Radiation from the Open End of a Coaxial Cable
2. Maricevic, Z.A.; Sarkar, T.K.; Hua, Y.; Djordjevic, A.R.; Time-domain measurements with the Hewlett-Packard network analyzer HP 8510 using the matrix pencil method Microwave Theory and Techniques, IEEE Transactions on , vol.39, no.3, pp.538-547, Mar 1991.
3. Dunsmore J.; Tuning band pass filters in the time domain Microwave Symposium Digest, 1999 IEEE MTT-S International , vol.3, no., pp.1351-1354 vol.3, 1999

Standards

1. MIL-C-39012C Connectors, Coaxial, RadioFrequency; General Specification for
2. TouchstoneÂ® File Format Specification Rev 1.1 (Draft)
3. TouchstoneÂ® File Format Specification Rev 2.0