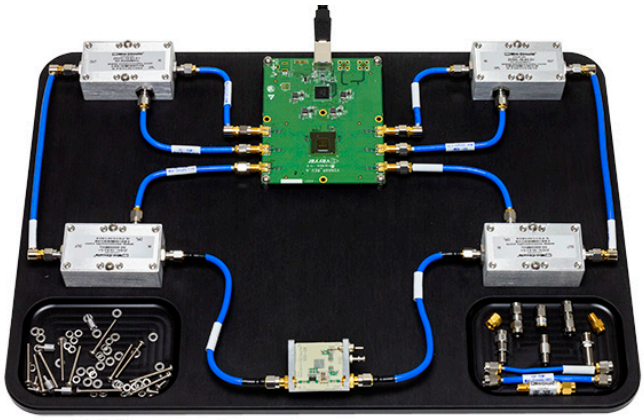
MICROWAVE TRANSCEIVER KIT UVNA-63

Project No. 1: DIY Vector Network Analyzer

Features

- *Hands-on learning tool for EM Course Work*
- *Complete kit for full 2-Port Vector measurements*
- *Open access to the entire VNA RF chain*
- *Implement in multiple software environments*



UNIVERSITY PROJECTS

Build *Your Own Vector Network Analyzer with RF Transceiver Board, RF & Microwave components, cables and calibration standards*

Develop *Real Time S-Parameter Measurement with Python or Matlab®*

Learn *Access to Online Tutorials and Sample Code*

Mini-Circuits®
www.minicircuits.com

vayyar
www.vayyar.com

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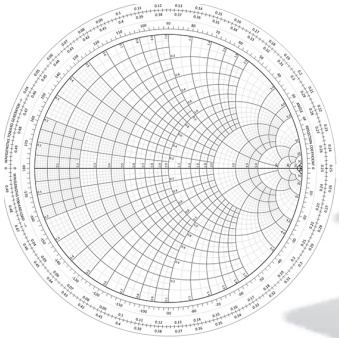
Bridging the gap

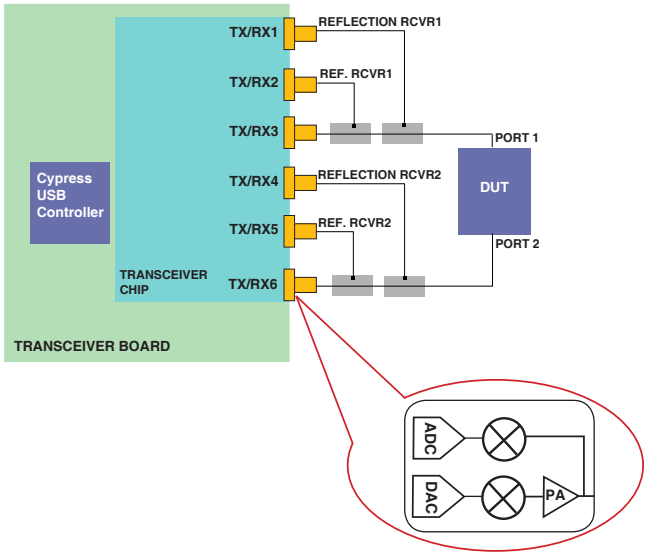
Textbook Theory



Lab Meaurements

- *Automated Measurements*
- *Automated Calibration*
- *Auto-port extension*

Functional Block Diagram



Transceiver Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units
Load Impedance	Z_L		50		Ω
Operating Frequency	f	100		6000	MHz
TX Power Setting	P_{tx}	-26		0	dBm
TX Power Step size			2		dB
Port Matching	S11		-12	-7	dBm
Vcc Supply Voltage	Vcc	4.75		5.25	V
Operational Current Consumption		0.4		0.65	A
Specification Temperature Range		18		35	°C
Input Power (No damage)	Pin_{max}			10	dBm
Port Isolation	Iso	65	90		dB

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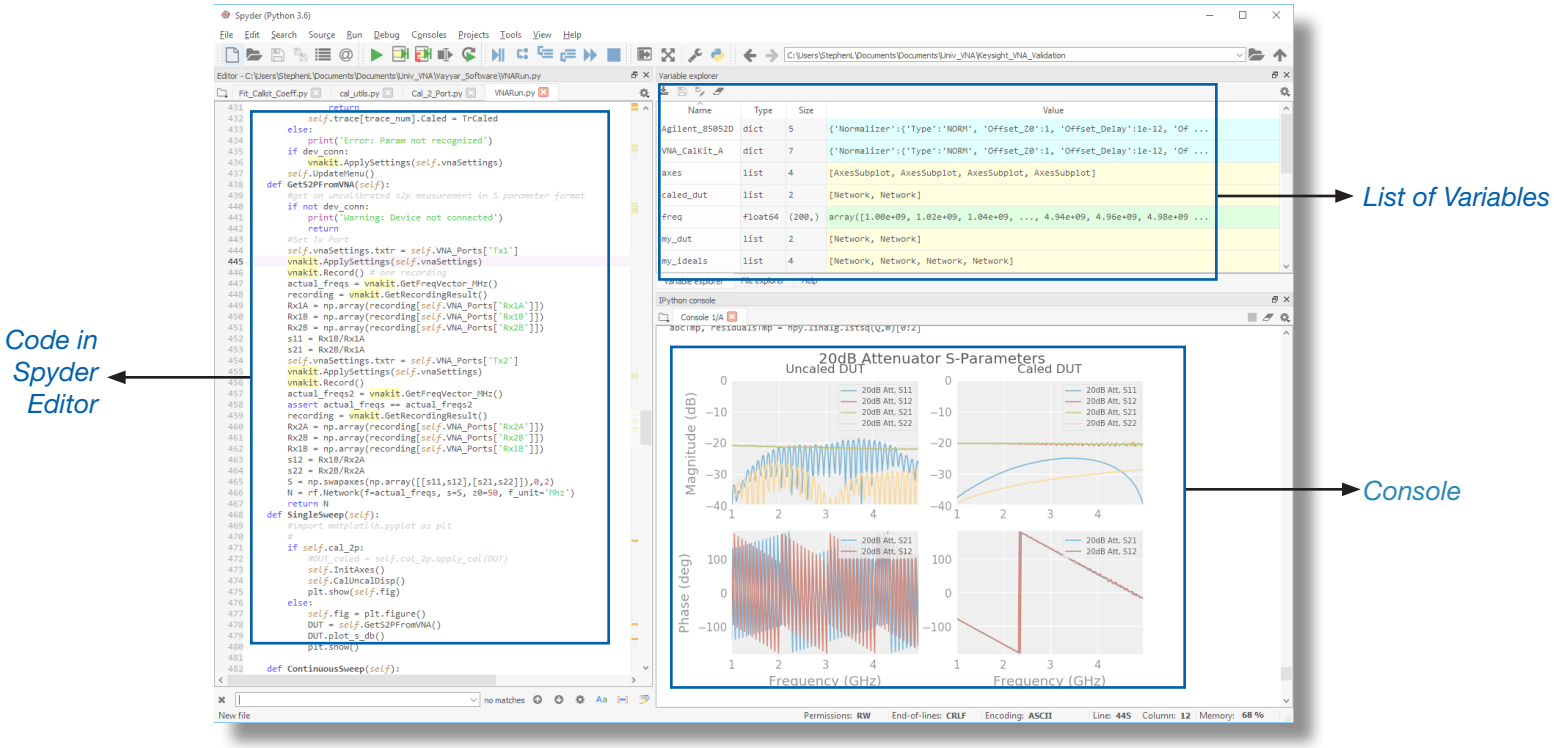
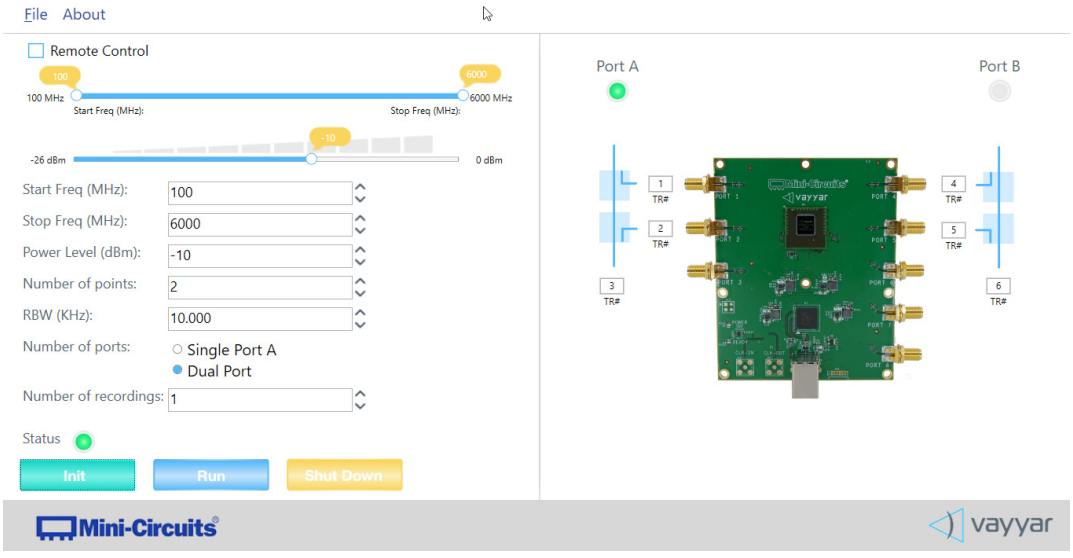
Create S-Parameter Algorithms to perform functions on Transmit, Reflected and Reference Signals to produce real-time results



Configure transceivers for sweep, RBW, power and step size through simple API



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Quantity	Description	Mini-Circuits Part No.
	KIT COMPONENTS	
1	Vayyar Transceiver Board	TB-UVNA
1	Tray	B12-269-02
1	Clear Cover 0.125" Thick	B13-269-02
2	16dB High Directivity Coupler	ZHDC-16-63-S+
2	10dB High Directivity Coupler	ZHDC-10-63-S+
1	USB 3.0 CABLE 2.69 FT	USB-CBL-AB-3+
4	141 Hand-Flex 3" Cable	141-3SM+
2	141 Hand-Flex 3" Cable	141-3SMRSM+
2	141 Hand-Flex 6" Cable	141-6SMR+
1	141 Hand-Flex 12" Cable	141-12SMR+
2	Flexible 141 6" Test Cable	FL141-6SM+
	CALIBRATION KIT	
1	Female - Open	B20-64-F6+
1	Female - Short	B20-64-F7+
1	Female - Load	ANNE-50F+
1	Female - Thru	SF-SF50+
	DUT'S	
1	Band Pass Filter, 2450 MHz	VBF-2435+
1	Low Pass Filter, 1500 MHz	VLF-1500+
1	GVA-84 EVAL BOARD	TB-410-84
1	3 dB Attenuator, 1 Watt	VAT-3+
1	6 dB Attenuator, 1 Watt	VAT-6+
1	15 dB Attenuator, 1 Watt	VAT-15+
1	50 Ohm Termination	ANNE-50+
2	SMA Male - SMA Male Adapter	SM-SM50+
2	SMA Female - SMA Female Adapter	SF-SF50+
	SUPPLEMENTAL	
1	SMA Wrench	B85-TM-134

About Mini-Circuits & Vayyar

Mini-Circuits is a global leader in the design, manufacturing and distribution of RF, IF, and microwave components and integrated modules covering the DC to 65 GHz band. With over 25 different product lines and over 10,000 active models, rapid response, demanding quality standards, value pricing, on-time delivery, and top-notch customer service have helped make Mini-Circuits the world's preferred supplier of RF and microwave products for over 50 years.

Founded in 2011, Vayyar started with the vision to develop a new modality for breast cancer detection by using RF to quickly and affordably look into human tissue to detect malignant growths. As the technology matured and evolved, Vayyar leveraged it to develop a unique System-on-Chip (SOC) to open up new capabilities and widen its original application scope to additional markets including robotics, smart home, retail and testing.

Over a simple dinner meal, these two companies realized that there was a gap in the RF industry in how new engineers were linking the knowledge they learn in the classroom to the sophisticated equipment they were using in their respective careers. Combining Mini-Circuits components and the Vayyar SOC, a powerful learning tool could be created to teach new and practicing engineers the challenges and wonders of the RF world.