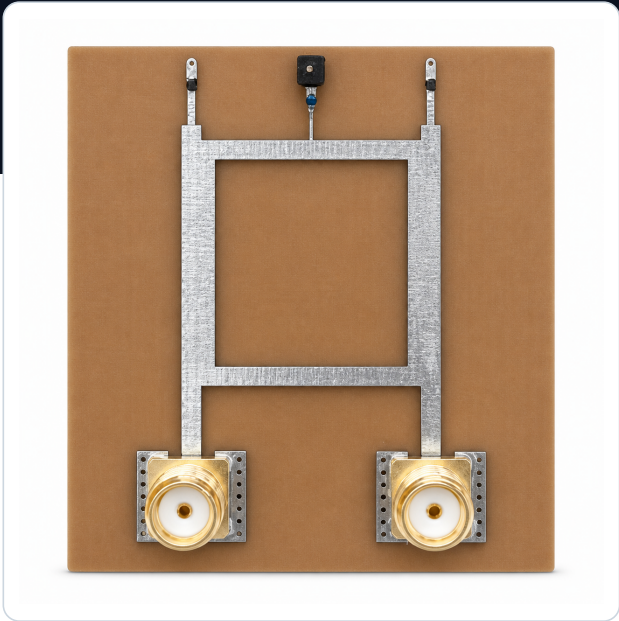


2.0-2.3 GHz Varactor RTPS

Reflection-type phase shifter with continuous voltage control, characterized across a 300 MHz S-band span.



RTPS prototype with two RF ports and voltage-bias input.

MEASURED RANGE

2.0-2.3 GHz

CHARACTERIZED SPAN

300 MHz

BIAS RANGE

0-12.13 V

measured

PHASE ADJUSTMENT

~100 deg

typical

PRODUCT OVERVIEW

A varactor-loaded reflection-type phase shifter developed for continuous analog phase control in S-band systems. Prototype measurements cover 2.0 to 2.3 GHz and fourteen bias-voltage states. Relative phase adjustment remains approximately 100 degrees across the characterized frequencies.

Development status: measured prototype data is provided for engineering evaluation. Input matching varies across the band and is strongest toward the lower-frequency portion of the present hardware.

TYPICAL APPLICATIONS

- S-band phased-array and beamforming experiments
- Analog phase-control research
- RF calibration and laboratory test systems
- Custom phase-shifter and feed-network development

ARCHITECTURE & INTERFACE

Topology	Reflection type
Tuning element	Varactor diode
RF ports	2 x SMA female
Control method	Analog voltage bias
Measured bias states	14
Measured bias range	0 to 12.13 V
Prototype status	Engineering evaluation

MEASUREMENT BASIS

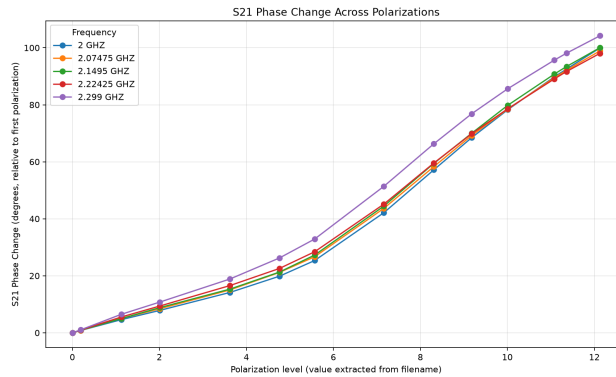
S-parameters were measured from 2.0 to 2.3 GHz across fourteen applied bias states. Phase change is plotted relative to the first bias state at five representative frequencies. Values are prototype measurements and are not production tolerances.

For custom frequency centering, control range, packaging, or integration work, contact alessandro.ghezzo@outlook.com.

Measured characterization

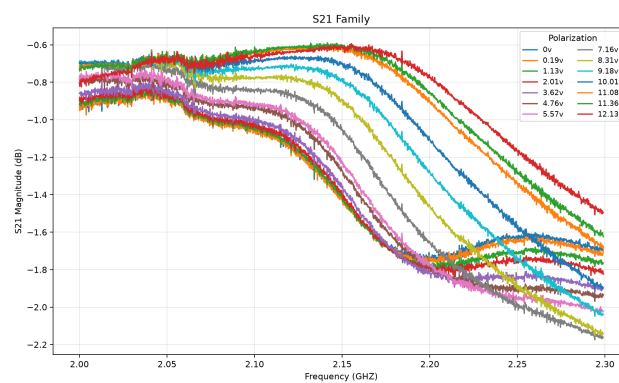
Prototype sweep from 2.0 to 2.3 GHz. Curves show the response across fourteen bias-voltage states; phase change is relative to the first state.

Relative S21 phase adjustment



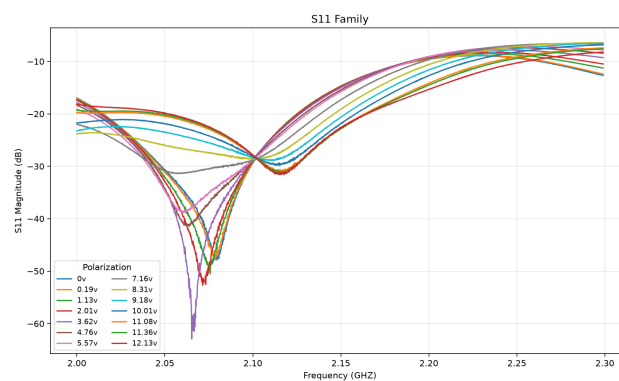
Approximately 98 to 104 degrees of total adjustment at the five plotted frequencies.

S21 magnitude family



Measured transmission magnitude across frequency and applied bias states.

S11 magnitude family



Input matching varies with bias and is strongest toward the lower-frequency portion of the sweep.