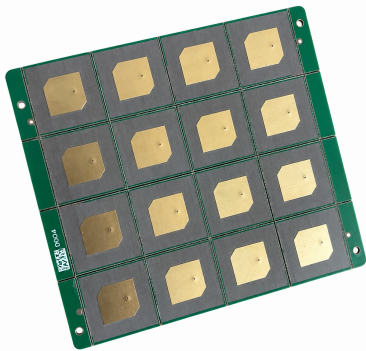
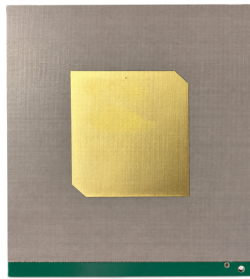


RF Products & Development Hardware

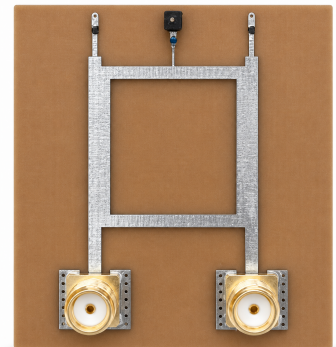
Measured and simulation-backed antennas, phase-control hardware, and configurable RF prototypes for evaluation and integration.



X-BAND ANTENNA

8.425 GHz RHCP

S-BAND ANTENNA

2.245 GHz RHCP

PHASE CONTROL

2.0-2.3 GHz RTPS

PORTFOLIO AT A GLANCE

Antennas

Circularly polarized S-band and X-band reference hardware.

Phase control

Discrete PIN-diode and continuously tunable varactor architectures.

Custom engineering

Frequency, packaging, controls, and integration adaptations.



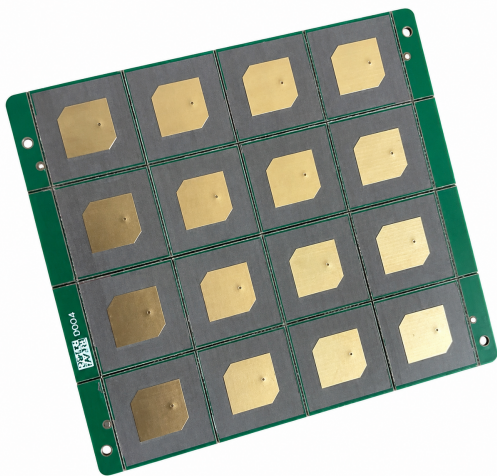
PRIMARY PRODUCTS

Circularly polarized antenna hardware

Compact reference designs for telemetry, CubeSat, SDR, laboratory links, and custom enclosure integration.

X-BAND

8.425 GHz RHCP Patch



Manufacturing panel shown; supplied as individual 20 x 20 mm elements.

Compact single-feed RHCP hardware with measured impedance matching and simulated circular-polarization characterization.

GAIN

6.5 dBi

MEASURED -10 DB BW

800 +/- 30 MHz

RHCP BW

~200 MHz

ELEMENT

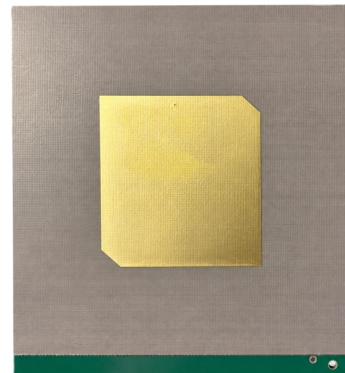
20 x 20 mm

- Measured S11 response
- Simulated axial ratio and gain
- SMA-fed low-loss PTFE PCB

Engineering prototype; contact us for custom adaptation.

S-BAND

2.245 GHz RHCP Patch



Single-element 85 x 85 mm S-band reference antenna.

Broadside RHCP patch for S-band telemetry experiments and integration work, supported by full-wave simulation data.

GAIN

6.92 dBi

-10 DB BW

59.9 MHz

MIN AXIAL RATIO

1.10 dB

OUTLINE

85 x 85 mm

- Simulated S11 and bandwidth
- Simulated axial ratio and gain
- 50-ohm SMA interface

Engineering prototype; contact us for custom adaptation.

PHASE-CONTROL PRODUCTS

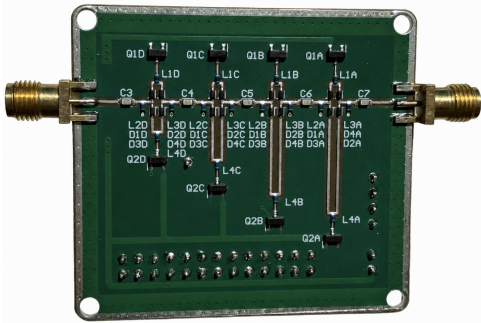
Discrete and continuously tunable architectures

Two S-band approaches for phase selection, control-system development, and feed-network integration.

S-BAND | DIGITAL

Switched-Line Phase Shifter

A four-bit, PIN-diode switched-line design for repeatable discrete phase selection with embedded digital control.



RESOLUTION

4-bit

SWITCHING

Series PIN diode

TOPOLOGY

Switched line

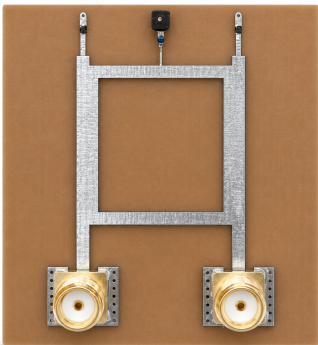
CONTROL

Embedded I2C

2.0-2.3 GHz | ANALOG

Varactor RTPS

A varactor-loaded reflection-type phase shifter providing continuous voltage-controlled phase adjustment across a measured 300 MHz span.



MEASURED RANGE

2.0-2.3 GHz

BIAS

0-12 V

PHASE ADJUSTMENT

~100 deg

BIAS STATES TESTED

14

ARCHITECTURE SELECTION

Phase command	Switched line: discrete RTPS: continuous
Control interface	Switched line: I2C RTPS: analog bias
Primary tuning device	Switched line: PIN diode RTPS: varactor
Best fit	Digital state control Continuous calibration and steering

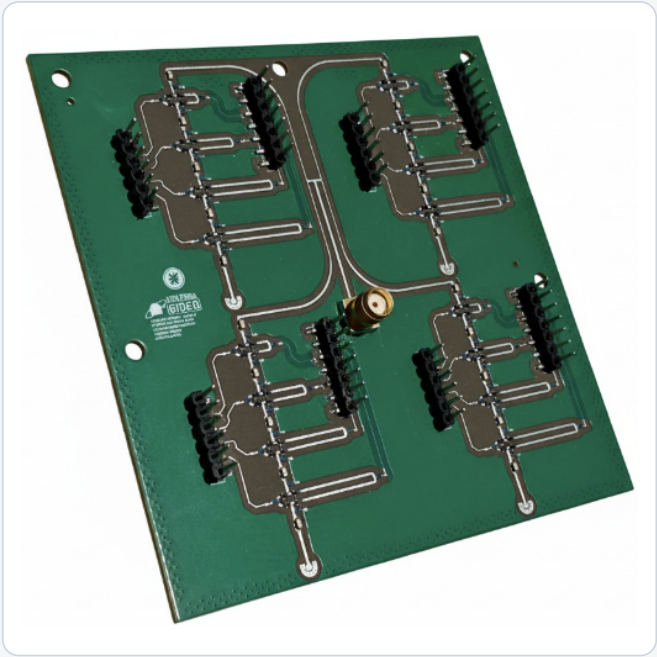
Both architectures are available as starting points for custom frequency, phase range, control, and packaging requirements.



DEVELOPMENT HARDWARE

S-band 2x2 phased-array platform

A laboratory reference platform for steering experiments, control development, and measured-versus-simulated evaluation.



RESEARCH PLATFORM

2.15 GHz 2x2 Array

Bias-controlled patch-array hardware for beamforming development, matching studies, and radiation-pattern comparison.

ARRAY

2 x 2

POLARIZATION

Linear

BROADSIDE GAIN

7.83 dBi

SCAN RANGE

+/-40 deg

PHASE RESOLUTION

5 deg

FORMAT

10 x 10 cm

CUSTOM RF ENGINEERING

From reference hardware to integrated design

Austral Microwaves supports custom antenna adaptation, phase-control networks, array prototyping, electromagnetic simulation, and report-ready RF characterization. Existing products can serve as measured starting points for frequency, packaging, connector, bias, and control-interface changes.

Antenna design

Frequency-specific patch and array development.

Characterization

S11, radiation pattern, gain, and axial-ratio reporting.

Phase control

PIN-diode, varactor, bias, and embedded-control integration.

Discuss a prototype or custom RF program

alessandro.ghezzo@outlook.com