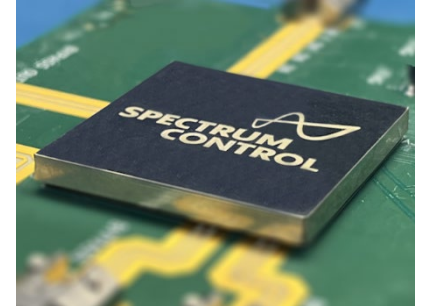


New RF+ SiP offers high-fidelity millimeter wave block conversion in a high-volume package, down-converting wideband mmWave signals covering 18 - 40 GHz into the standard 2 - 18 GHz band

*This new standard-part SiP is part of the RF+ SiP platform from Spectrum Control that delivers the capabilities of an Integrated Microwave Assembly (IMA) in a 30 mm<sup>2</sup> surface mount package.*



With its superior wideband performance, compact footprint, and volume-ready design, this new RF+ System-in-Package (SiP) platform is ideal for applications including wireless communications, test & measurement, and aerospace & defense

**Revolutionary Miniaturization.** Incorporates Spectrum Control's industry-leading technology for high performance signal conditioning with full isolation, filtering, digital control, and power management.

**Dramatic Cost Reduction.** Surface-mount design and integrated digital control offers up to 86% reduction in lifecycle costs, 3x the design velocity, and significant reduction in design & integration NRE.

**Customizable.** The platform is designed to support custom assemblies with low NRE. These could include Wideband RF Front End, X-Band RF Front End, Switched Filter Banks, Frequency Converters, Power Amplifiers, or your custom IMA.

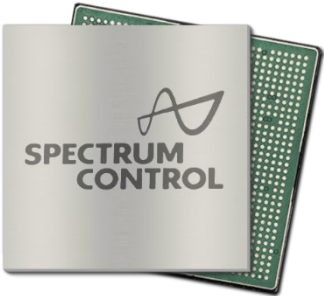
This RF+ SiP is part of Spectrum Control's SCi Blocks architecture that revolutionizes how RF is integrated into digital systems.

**Applications.** Radar, Smart Antennas, Wireless Comms, Electronic Warfare, Aerospace, Unmanned Systems, Test & Measurement Equipment.

- Two-channel mmWave block downconverter
  - Input Channel 1: 18-26 GHz
  - Input Channel 2: 26-40 GHz
- Integrated power supply generated from a single +9VDC input and a separate +5VDC supply for direct output PA bias and control
- Integrated digital gateway with customizable parallel or serial interface to control and provide status of
  - Filter Bands
  - Amplifier Gain
  - Digital Attenuators
  - Regulators (ON/OFF, Sequencing)
  - RF Detector Thresholds
  - Temperature
- On-board memory provides storage capacity for calibration data to support optimal performance over wide temperature ranges
- Designed for high volume production and optimized to minimize supply chain risk
- US-manufactured and sourced
- Custom configurations available



Description	Specification		Units
	Band 1	Band 2	
Output Frequency Range	18 - 26	26 - 40	GHz
LO Frequency	10.75		GHz
Input Frequency Range	6.25 - 14.25	3 - 17	GHz
Gain (0 dB Attenuation)	22-28		dB
Gain Flatness	+/- 3		dB
Noise Figure	7	9	dB
OP1dB	10	10	dBm
OIP3	19	20	dBm
Input Gain Control	26		dB
Input Gain Control Step Size	0.5		dB
Output Gain Control	26		dB
Output Gain Control Step Size	0.5		dB
Attenuator Settling Time	1		us
Switching Speed Fast Mode	100		ns
Switching Speed Low Spur Mode	10		us
Current (+9VDC), All Amplifiers Active	1700		mA
Current (+9VDC), Unused Band Amplifiers Disabled	1300		mA
Operating Temp. Range	-40 to +85		°C



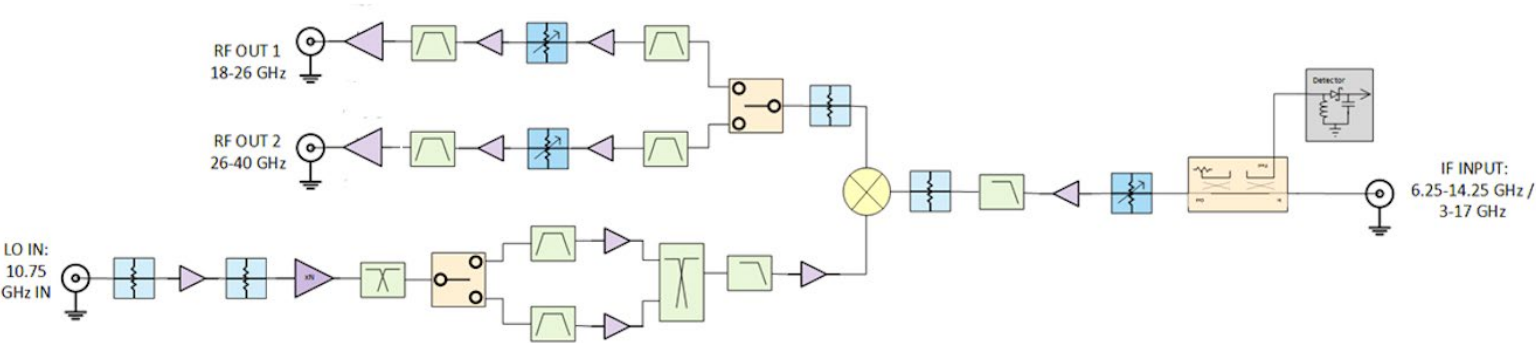
SCRS-00-1003 Includes

- Intel FPGA integrated
- 12 Voltage Regulators
- 12 RF Amplifiers
- 2 Digital Attenuators
- 3 RF Detectors
- 10 RF Filters

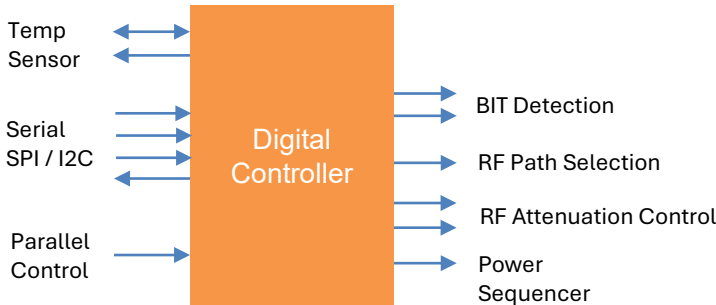
Available Part Numbers

Part Number	Description
SCRS-00-1003	2-Channel mmWave Block UpConverter (Ch1:18-26 GHz, CH2: 26-40 GHz)
SCRS-00-1001	2-Channel mmWave Block DownConverter (Ch1: 18-26 GHz, CH2: 26-40 GHz)
SCRS-00-1002	X-Band Transceiver Front End
SCRS-00-XXXX	Custom solutions include Wideband RF Front End, X-Band RF Front End, Switched Filter Banks, Frequency Converters, Power Amplifiers, or your custom IMA

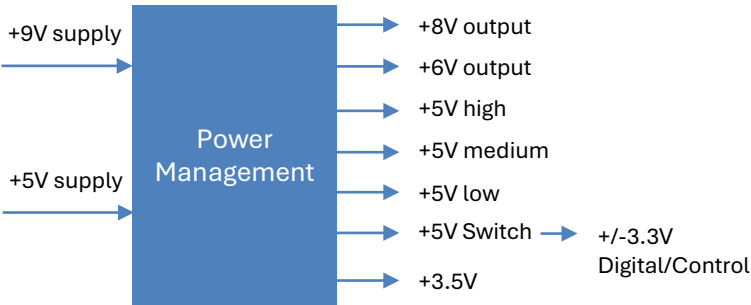




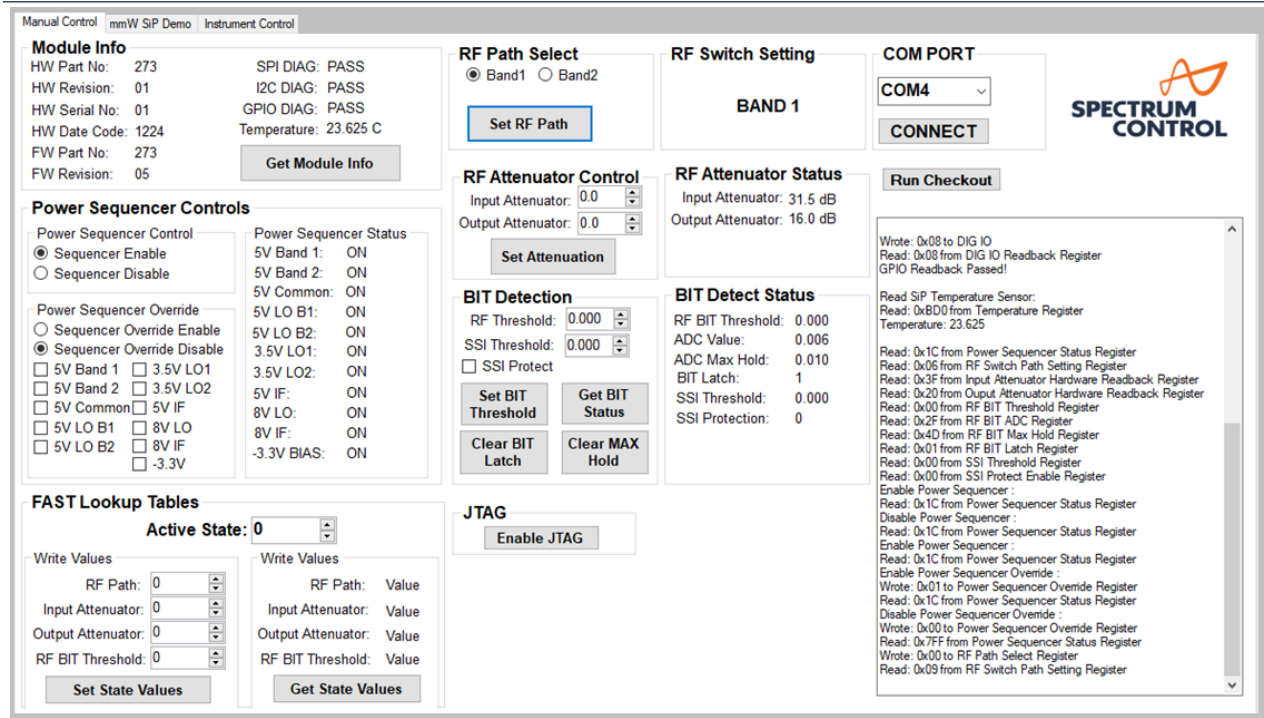
Software Control

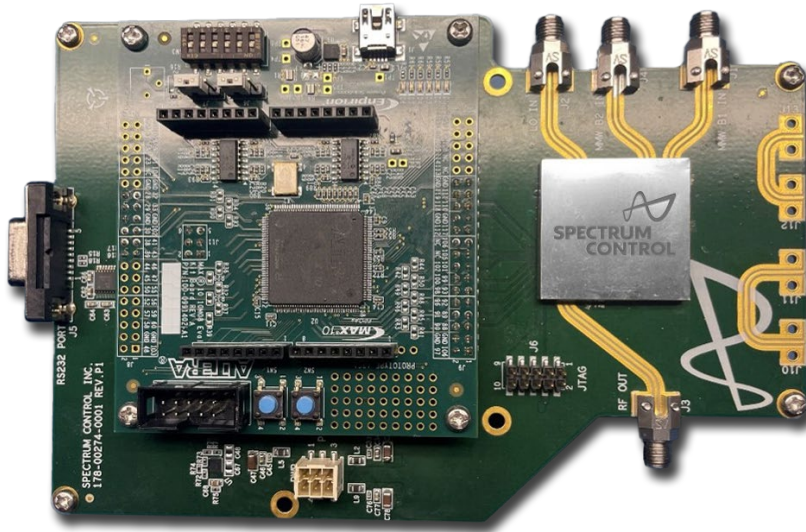


Power Management

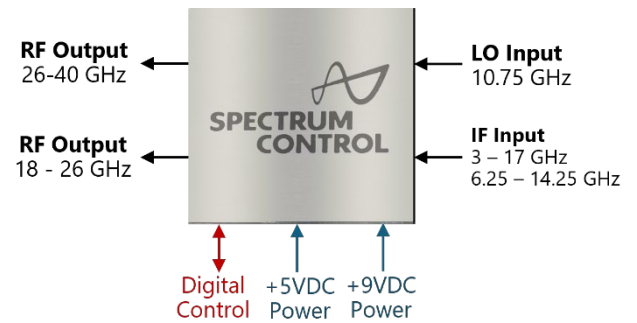


Software Graphical User Interface

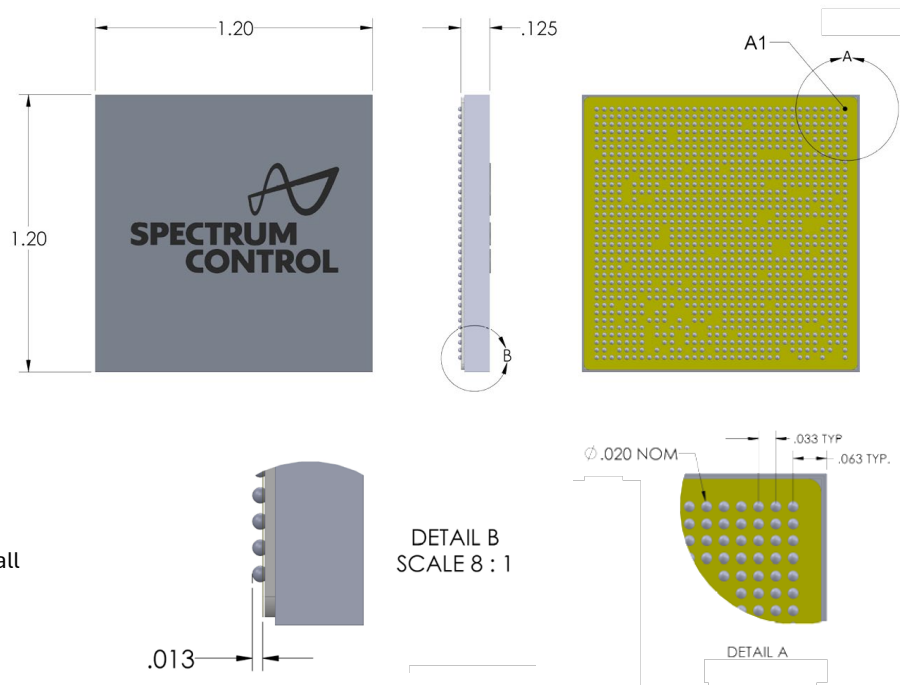




## Integration



## Dimensional Drawings



## NOTES:

1. All linear dimensions are in inches.  
All dimensions are nominal.
2. Dimensioning and tolerancing per ASME Y14.5M.
3. This drawing is subject to change without notice.
4. Dimension is measured at the maximum solder ball diameter

## Connect with our experts

Find out more about SCi Blocks products and solutions and talk to us about your project requirements including custom SiPs. Ask about our virtual demos and evaluation hardware and get full datasheet including test data, and integration information.

Visit [spectrumcontrol.com/sci-blocks](https://spectrumcontrol.com/sci-blocks) or email us: [sciblocks@am.spectrumcontrol.com](mailto:sciblocks@am.spectrumcontrol.com)

