SCi BLOCKS™

RF+ SiP Platform

System building blocks for modern RF+digital systems

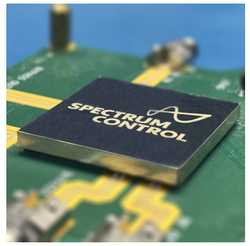
Complete platform for mixed signal integration in small surface-mount packages: high fidelity RF signal conditioning, power supply & distribution, and digital tuning, command & control.

- Miniature and integrated
- Software-instrumented
- Dramatically reduced cost and development time
- No performance trade-offs

SPECTRUM CONTROL™

A Scalable, Flexible Platform for System Development

We are redefining how developers can design and build modern RF and digital systems with fully embedded, system-ready solutions.



- Radically shrink system footprint without compromising performance
- Significantly reduce engineering time with pre-engineered system blocks
- Profoundly simplify manufacturing and lower cost with volume-ready SMT solutions

Applications include wireless comms, test & measurement, and aerospace & defense.

The Smarter Way to Build RF+Digital Systems

Accelerated Design
Save thousands of engineering hours with pre-qualified, pre-tested SiPs that simplify your RF+Digital development. Simply plug and play into your system.

Simplified Sourcing
We select, characterize, integrate and test the best components so you don't have to.

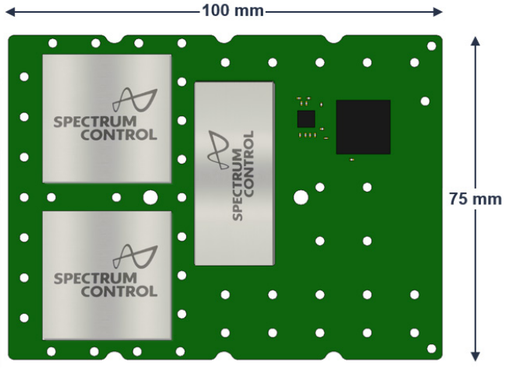
Software-Instrumented for Embedded Control
FPGA-based control architecture enables software tuning, rapid integration, and performance stability across frequency ranges, all with minimal power draw. Ready for dynamic management by ML/AI.

Integrated Power Management
Each SiP delivers unified power regulation, conversion, and routing, requiring only one or two low-voltage inputs.

Optimize Your Digital-Analog Integration

Achieve optimal system performance
Combine the configurability of direct sampling with the speed and signal integrity of mission-specific analog front ends.

Reduce design risk
Our SiP platform helps you avoid the integration challenges, interoperability issues, and latency penalties commonly associated with mixed-signal architectures.



Minimize board space and maximize performance with our compact SiPs.

Improve the density of 3U VPX, VNX and other form factors

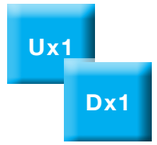
How will you shrink your 6G system footprint or use that extra board space to enhance the mission?

SiP Platform Architecture

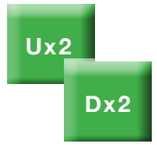
SCi BLOCKS™

Frequency Converter SiPs

High-fidelity millimeter wave block conversion in a high-volume package. Extend the frequency range of your existing 2-18 GHz system or design a new system that operates in the 18-40 GHz bands with small footprint and high per formance. These are single-channel (up or down) block conver ters that can be used separately or together for receive and/or transmit functions.



Single-channel mmWave block converters
Extend the frequency range of your existing 2-18 GHz system or design a new system that operates in the 18-40 GHz bands with small footprint and high per formance.



Multi-channel mmWave block converters
Rapidly design a new multi-channel system that operates in the 18-40 GHz frequencies and then downconver ts to IF in the 2-18 GHz frequency band for processing.

Upconverter SiP	Downconverter SiP
• 12 Voltage Regulators	• 13 Voltage Regulators
• 12 RF Amplifiers	• 11 RF Amplifiers
• 2 Digital Attenuators	• 2 Digital Attenuators
• 3 RF Detectors	• RF detector
• 10 RF Filters	• 11 RF Filters

These SiPs are of fered in two configurations: standalone or multi-channel with a distributed control architecture.

Service SiPs

These SiPs are designed to work in suppor t of other SiPs to provide distributed control, high quality reference signals and more.

LOx4 4-channel local oscillator

CLx4 32 GHz Clock SiP for high-speed direct sampling

Ctrl Central control SiP for multi-channel implementations

Custom SiPs

Leverage our design, simulation, and manufacturing platform to produce high performance, ultra-small, surface-mount, integrated microwave assemblies (IMAs).

- Innovative material science and packaging technology
- Proven, repeatable miniaturization technology and processes
- Wideband and high frequency exper tise
- Low NRE
- Rapid turnaround time from concept to production
- Cost-ef fective—designed for volume

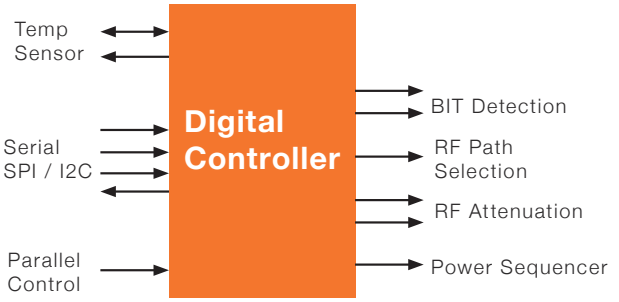
Custom SiP examples include

- Wideband RF Front End
- X-Band RF Front End
- Switched Filter Banks
- Frequency Conver ters
- Power Amplifiers

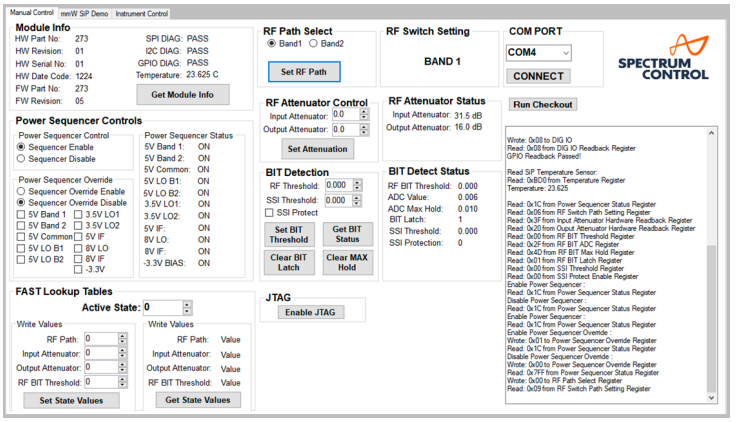
Software-Instrumented for Superior Tuning and Control

Our full-featured SiPs offer a digital-ready interface for easy integration into your system. Use our embedded FPGA-based control architecture to build sophisticated configuration profiles to maintain device performance across wide frequency ranges and different signal attenuation requirements. ML /AI-ready.

Embedded Digital Gateway

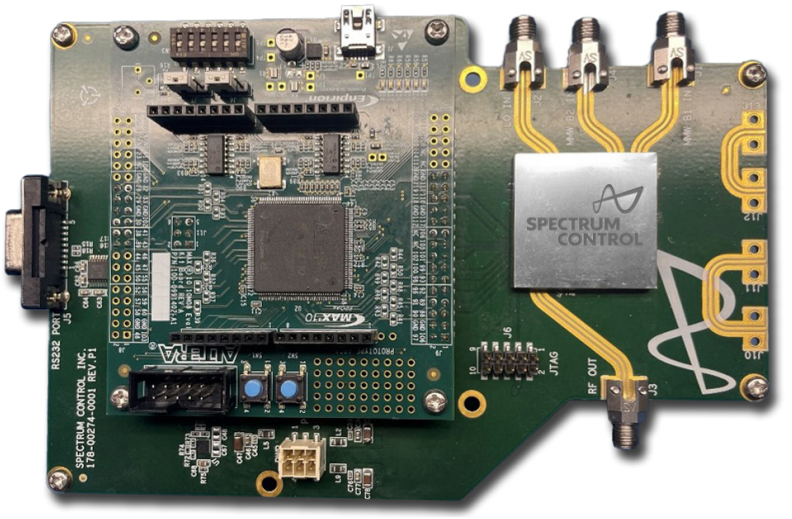


Graphical User Interface



Test Fixture/Evaluation Board

Put our SiPs to the test using our test fixture/evaluation board.



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 datasheets including test data, and integration information.

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or email us: **sciblocks@am.spectrumcontrol.com**

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