

ANALOG OVER ARRAY™



Enhanced Open-Pin-Field Arrays Simultaneously Run Analog, Digital, and Power Signals

REFERENCE DESIGNS AND EVALUATION KITS

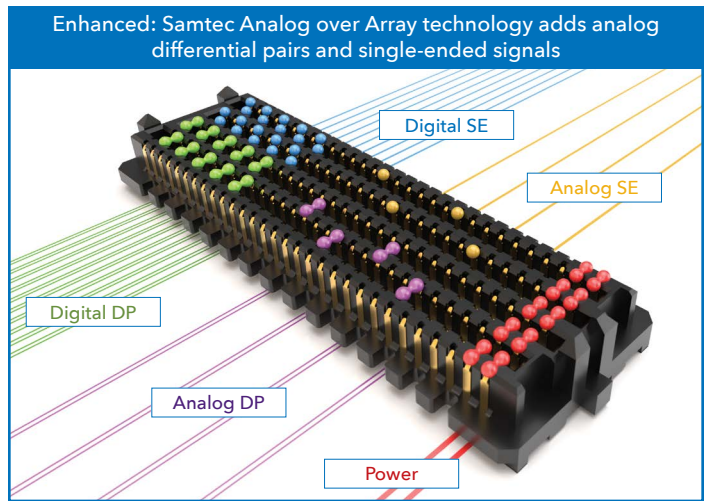
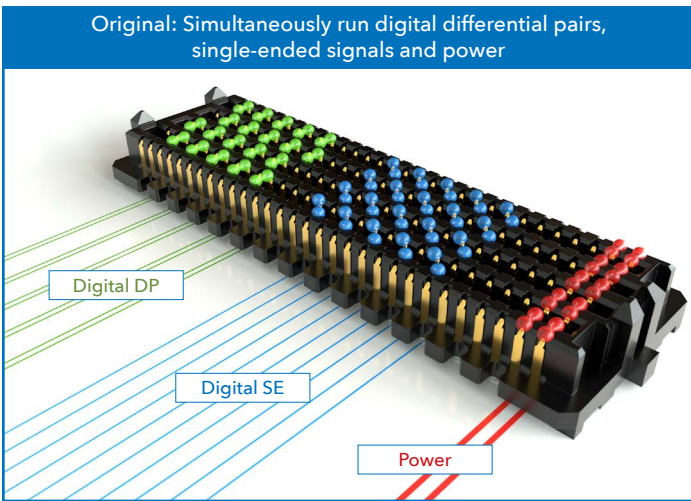
High density RF applications typically require up to hundreds of individual RF connectors. Samtec Analog Over Array™ Connectors can replace dozens of precision RF connectors offering a smaller footprint, less weight and cost optimization.

DC TO
15
GHz

Samtec Analog over Array connectors are dense, high-frequency, open-pin-field solutions supporting digital and analog differential or single-ended signaling. Samtec high-density array connectors are already proven in high-speed, high-performance digital applications. For RF applications, the Samtec Analog over Array Reference Designs achieve industry-leading differential crosstalk and return loss performance beyond 8 GHz.

FEATURES

- Open-pin-field design with maximum routing and grounding flexibility
- Analog and digital signals (differential pairs and/or single-ended) plus power through the same interconnect
- Differential ground pattern supports RF SOCs
- Single-ended ground pattern



APPLICATIONS

5G/LTE Wireless

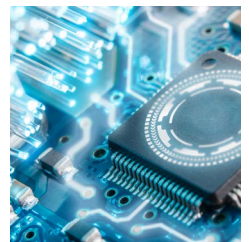
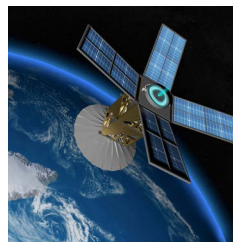
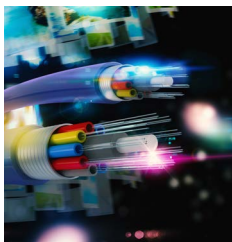
Remote PHY, MSOs

Phased/Digital Array Radar

Test & Measurement

LEO/MEO Satellites

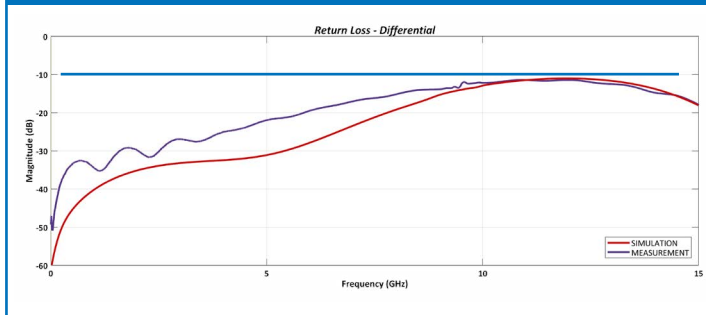
RFSoc



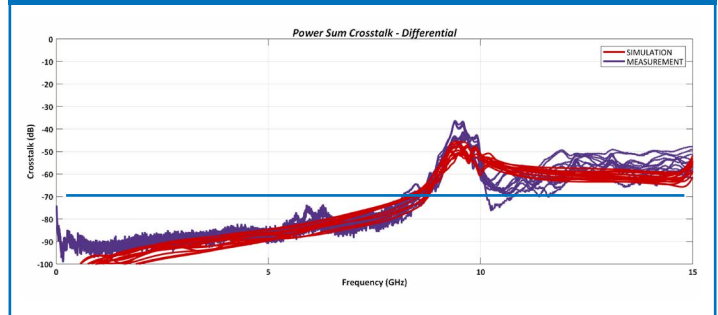
PERFORMANCE

- 50 Ohm system impedance (single-ended); 100 Ohm system impedance (differential)
- Return loss (maximum): -12 dB up to 4 GHz; -10 dB up to 8 GHz
- Crosstalk isolation between channels (minimum): -69 dBc to 4 GHz; -53 dBc to 8 GHz

For a Samtec SEARAY™ connector running six differential pairs of RF, return loss is better than -10 dB from 0-15 GHz:



Analysis of six differential pairs for crosstalk, where the SEARAY™ connector maintains -70 dB of isolation up to 8.5 GHz:

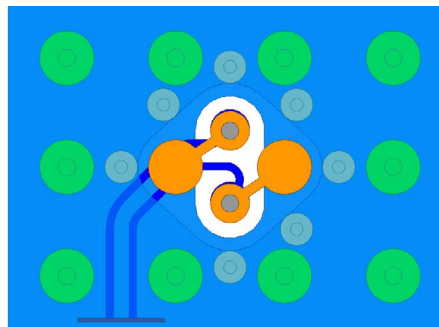


ANALOG OVER ARRAY REFERENCE DESIGNS

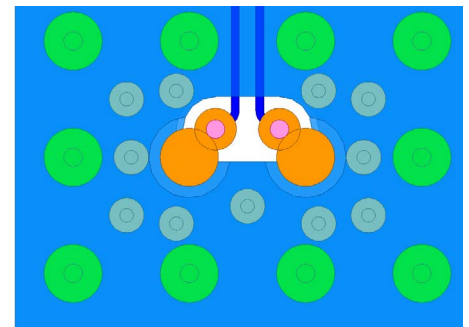
- Recommended PCB materials selection
- Recommended PCB stack up
- Launch optimizations
- Pin Mapping Guide
- Full Characterization Report



www.samtec.com/kits



Digital Breakout Region

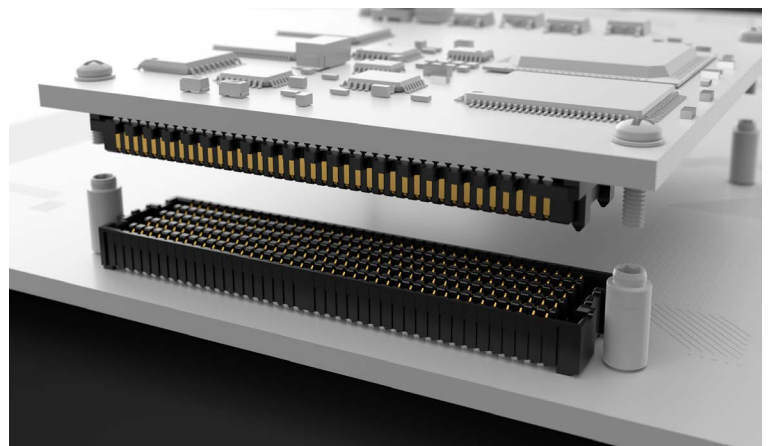


Analog over Array Launch Optimization

ANALOG OVER ARRAY DESIGN CONNECTOR OPTIONS

SEARAY™ High-Density Open-Pin-Field Arrays

- 560-pin single array connector can support up to 26 differential RF signals
- 560-pin single array connector can support six differential RF signals plus digital I/O and power
- Reference Design and Evaluation Kits for additional Samtec open-pin-field arrays are in development (SEAX8, NVAX, APX6, LPAX, GMI)



For more information, please visit samtec.com/kits or email SIG@samtec.com.