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.

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 though 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

**REFERENCE DESIGNS AND EVALUATION KITS**

| Original: Simultaneously run digital differential pairs, single-ended signals and power |
| Enhanced: Samtec Analog over Array technology adds analog differential pairs and single-ended signals |

**REFERENCES**

- DC TO 15 GHz

**REFERENCES**

- 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:

For an 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

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.

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