

# / XRF16 AMD RFSOC GEN3 SYSTEM-ON-MODULE

AVNET®

## Production-ready 16x16 direct-RF sampling module with 6 GHz analog bandwidth

The Avnet XRF16™ RFSoc System-on-Module is designed for integration into deployed RF systems demanding small footprint, low power, and real-time processing. The XRF16 features the AMD Zynq® UltraScale+™ RFSoc Gen3 ZU49DR, with 16 RF-ADC, 16 RF-DAC channels, and 6GHz RF bandwidth.

Combine the production-ready XRF16 module with the XRF16 Carrier Card and Avalon™ software suite to jumpstart proof-of-concept and application development. Then deploy your system with the same XRF16 module used for proof-of-concept. Example code and tutorials demonstrate AMD RFSoc multitile sync (multi-converter sync) and multi-board synchronized analog capture.

## Features

### AMD Zynq UltraScale+ Gen3 ZU49DR RFSoc

- 16x ADCs, 14-bit up to 2.5 GSPS
- 16x DACs, 14-bit up to 9.85 GSPS (10 GSPS available)
- Quad-core Arm® Cortex®-A53 processing subsystem
- 1 GbE, PCIe Gen1/2, SATA, USB2/3
- UltraScale+ programmable logic

### High-Speed Data Transfer

- 16x ultra-fast AMD GTY serial transceivers
- Quad Mesh™ firmware combines AMD Aurora protocol with GTY transceivers to stream data with four peers, facilitating tiling in high performance real-time systems

### Clocks & Synchronization

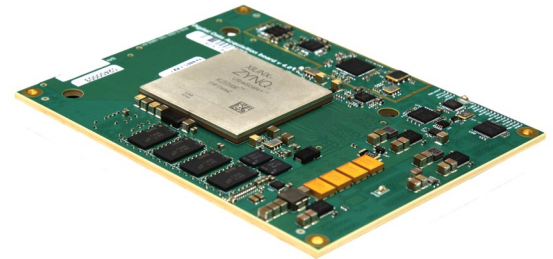
- Ultra-low jitter programmable sampling clocks
- External or onboard programmable TCXO reference clock
- Phase coherent synchronous sampling across all converters & multiple boards

### Memory

- 4GB DDR4 @ Programmable Logic
- 4GB DDR4 @ Processor Subsystem
- 32GB eMMC persistent storage
- 128MB QSPI boot storage

### System

- 4" x 5" footprint
- 5.5V to 16V input
- Temperature monitor
- Industrial temperature rated
- Air and conduction cooling options



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## Kit includes

- XRF16 System-on-Module
- Avalon™ software

## Target apps

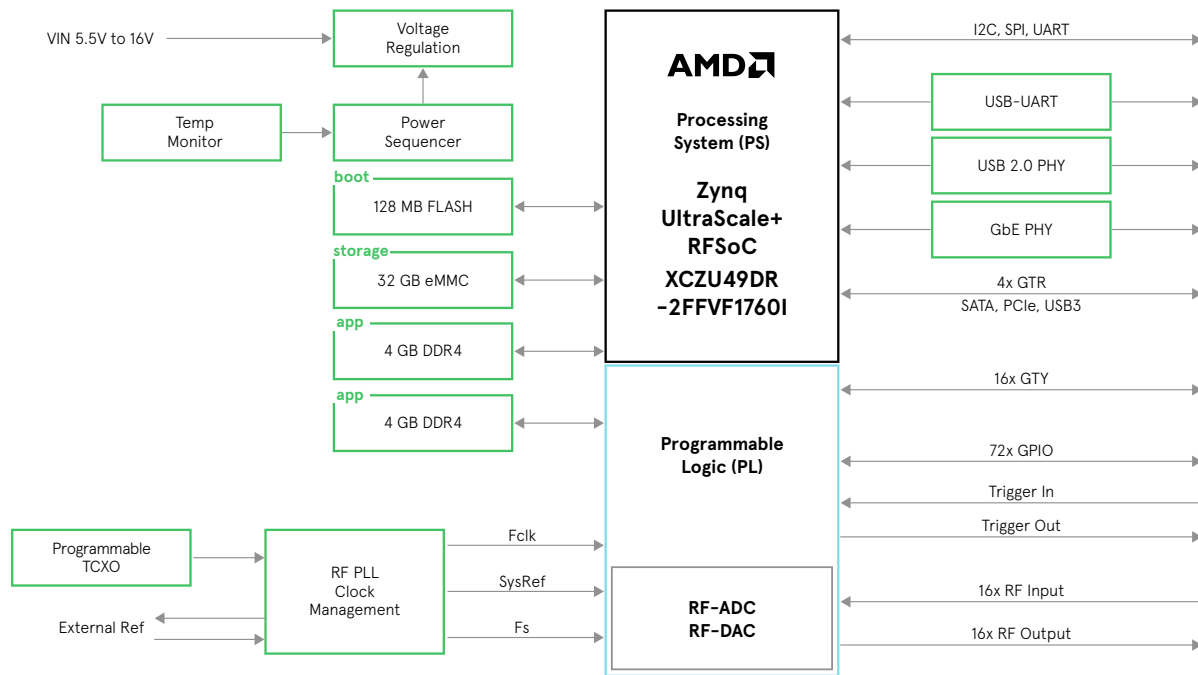
- Phased Array Radar
- 5G Massive MIMO
- Hybrid Beamforming
- Signal Detection & Jamming
- Medical Imaging
- Multi-Channel RF Instrumentation

For more information on the XRF16 Gen3 SOM: [avnet.me/xrf16gen3-som](https://avnet.me/xrf16gen3-som)

For information on the XRF family: [avnet.me/xrf-family](https://avnet.me/xrf-family)

/ XRF16  
Module

## Block diagram



## Featured manufacturers



## Parts

Part number	Description	Price and availability
AES-XRF16-ZU49-G	XRF16™ AMD RFSoc System-on-Module 16-Channel / Gen-3 / 6 GHz	<a href="https://avnet.me/xrf16gen3-som-pdp">avnet.me/xrf16gen3-som-pdp</a>

## Related parts

Part number	Description	Price and availability
AES-XRF16-ZU39-G	XRF16™ AMD RFSoc System-on-Module 16-Channel / Gen-2 / 5 GHz	<a href="https://avnet.me/xrf16-som-pdp">avnet.me/xrf16-som-pdp</a>
AES-XRF8-ZU47-G	XRF8™ AMD RFSoc System-on-Module 8-Channel / Gen-3 / 6 GHz	<a href="https://avnet.me/xrf8-pdp">avnet.me/xrf8-pdp</a>
AES-XRF8-ZU48-G	XRF8™ AMD RFSoc System-on-Module 8-Channel / Gen-3 / 6 GHz with SD-FEC	Call for quote
AES-XRF16-CC-G-D	XRF16 Carrier Card Rev D	<a href="https://avnet.me/xrf16-cc">avnet.me/xrf16-cc</a>
AES-XRF-HEATSINK-V2	XRF Heatsink Passive Cooling Solution V2	<a href="https://avnet.me/xrf-heatsink">avnet.me/xrf-heatsink</a>
AES-XRF-HEATSINK-V2-FAN	Optional fan for the XRF Heatsink Passive Cooling Solution V2	<a href="https://avnet.me/xrf-heatsink-fan">avnet.me/xrf-heatsink-fan</a>
AES-XRF-ISORATE-CABLE-60	IsoRate to Cable SMA Breakout	<a href="https://avnet.me/xrf-isorate-board">avnet.me/xrf-isorate-board</a>

Countries available for purchase: Americas, EMEA

## Contact information

**North America**  
2211 S 47<sup>th</sup> Street  
Phoenix, Arizona 85034  
United States of America  
1-800-585-1602

**Europe (Silica)**  
Gruber Str. 60c  
85586 Poing  
Germany  
+49-8121-77702

**Europe (EBV)**  
Im Technologiepark 2-8  
85586 Poing  
Germany  
<http://ebv.com/contact>

1.800.332.8638 / [avnet.com](https://avnet.com)

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