



AV 145

Phased-Array Radar Transceiver
Electronic Warfare ESM /ECM

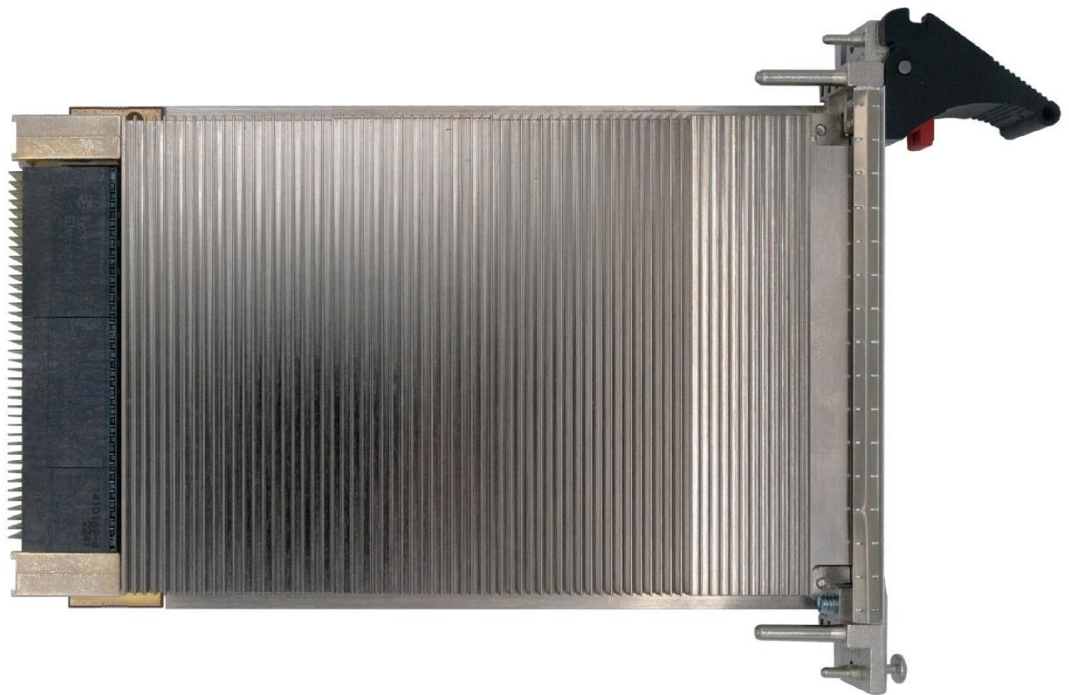
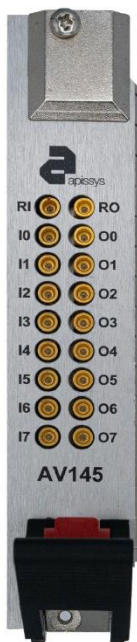
3U VPX

ZYNQ Ultrascale+ RFSoc

Octal 14-bit 5 Gsps ADC

Octal 14-bit 9.85 Gsps DAC

Conduction or Air-Cooled



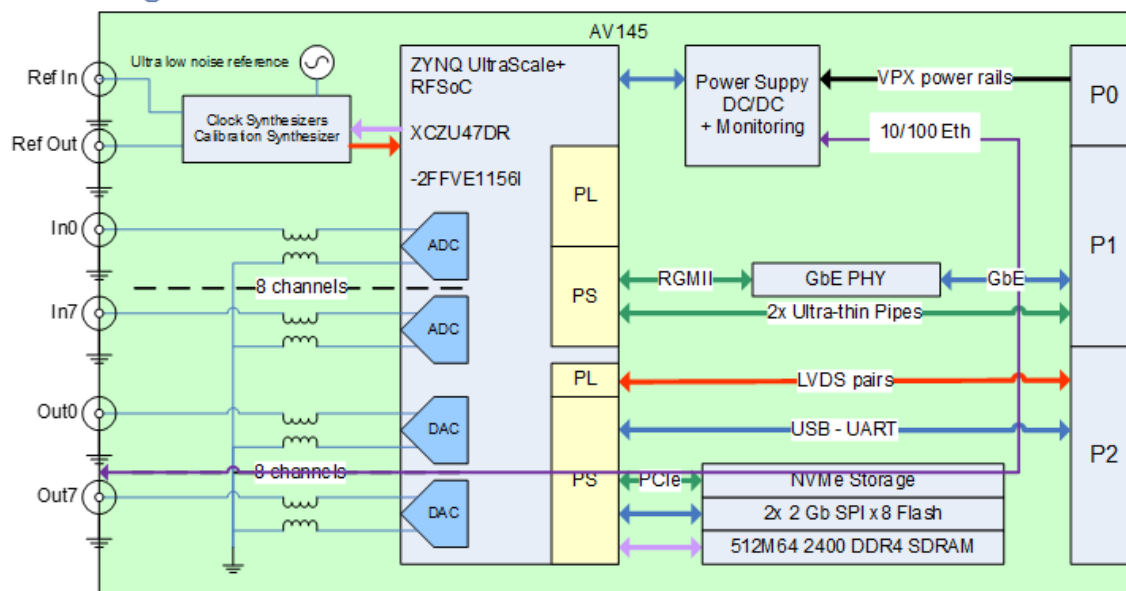
Applications

Phased-Array Radar Transmitter / Receiver
Electronic Warfare ESM /ECM
Broadband Communication

Features

8 channels 5 Gsps 14-bit ADC
8 channels 9.85 Gsps 14-bit DAC
Configurable DDC and DUC
2 Ultra Low jitter clock synthesizer
External or internal sampling clock reference
User programmable Xilinx® ZYNQ® Ultrascale+™ ZU47DR RFSoc
1x 64-bit 4GBytes DDR4 2400 SDRAM
1x 128GBytes NVMe embedded SSD
3U OpenVPX standard compliant

Block Diagram



Specifications

Form Factor

3U VPX Air-cooled Vita 48.1, pitch 1.0"
3U VPX Conduction cooled Vita 48.2, pitch 1.0"

VPX Profile

SLT3-PAY-2F2U-14.2.3

Analog Input/Output

Input coupling: AC
Full power bandwidth: 100MHz to 6 GHz
Full scale: +9 dBm
Output coupling: AC
Full power bandwidth: 100MHz to 6 GHz
Full scale: -5 dBm
Impedance: 50 Ohm
Connectors: SMPM

Analog-Digital Conversion

Eight channels, up to 5Gbps
Resolution: 14 bit
Sampling Performances at 5Gbps
NSD: -150 dBFS/Hz at -10dBFS at 3.5GHz
HD2/HD3: -68 dBFS at -10dBFS at 3.5GHz
IMD3: -73 dBFS at -7dBFS at 3.5GHz
Configurable DDC

Digital-Analog Conversion

Eight channels, up to 9.85Gsps
Resolution: 14 bits
Sampling Performances at 9.85Gsps
NSD: -165 dBFS/Hz at 0dBFS at 3.5GHz
HD2/HD3: -60 dBFS at 0dBFS at 3.5GHz
IMD3: -68 dBc at -16dBFS at 3.5GHz
Configurable DUC

Clock

External or internal sampling clock reference
 External reference
 Frequency: 10MHz to 200MH
 Impedance: 50 Ohm
 Connectors: SMPM
 Two Ultra-low jitter clock synthesizer

Memory

One banks 64-bit 4GBytes DDR4 2400 SDRAM
Two 2 Gbit QSPI FLASH memory
One 128 GBytes NVMe SSD

Operating Temperature

Air-cooled EAC4, 0°C to +55°C
Conduction-cooled ECC3, -40°C to 70°C

VPX interface

P1:
Data plane: two fat pipes supporting PCIE GEN3
Control plane: two ultra-thin pipe CPUTP to PS supporting 1 Gbps SGMII
User defined: ultra-thin pipes UART and USB2.0, thin pipe for 1000BASE-T

P2:
18 LVDS differential pairs, configurable as 36 single ended LVCMOS

Operating Temperature

Air-cooled EAC4, 0°C to +55°C
Conduction-cooled ECC3, -40°C to 70°C

Power dissipation

+12V: 7.6 A max (91W)
+5V : 0.5A max (2.5W)
+3.3VAUX: 0.6A max (2W)

Weight

Air cooled : 630g
Conduction cooled : 700g

Board Support Package

- FPGA example design
- SW API and examples, Windows 10 64-bits / Linux 64-bits
- User manuals
- Quick start guide

Ordering informations

Part Number			AV145	-	C
Cooling		Air		-	AS
		Conduction		-	CS



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