

AV 153
Phased-Array Radar Transceiver
EW-ESM/ECM

3U VPX / SOSA
Intel Agilex 9 AGRW027
Octal 10 bit 64 Gsps ADC
Octal 10 bit 64 Gsps DAC
Analog bandwidth up to 20 GHz
Conduction Cooled



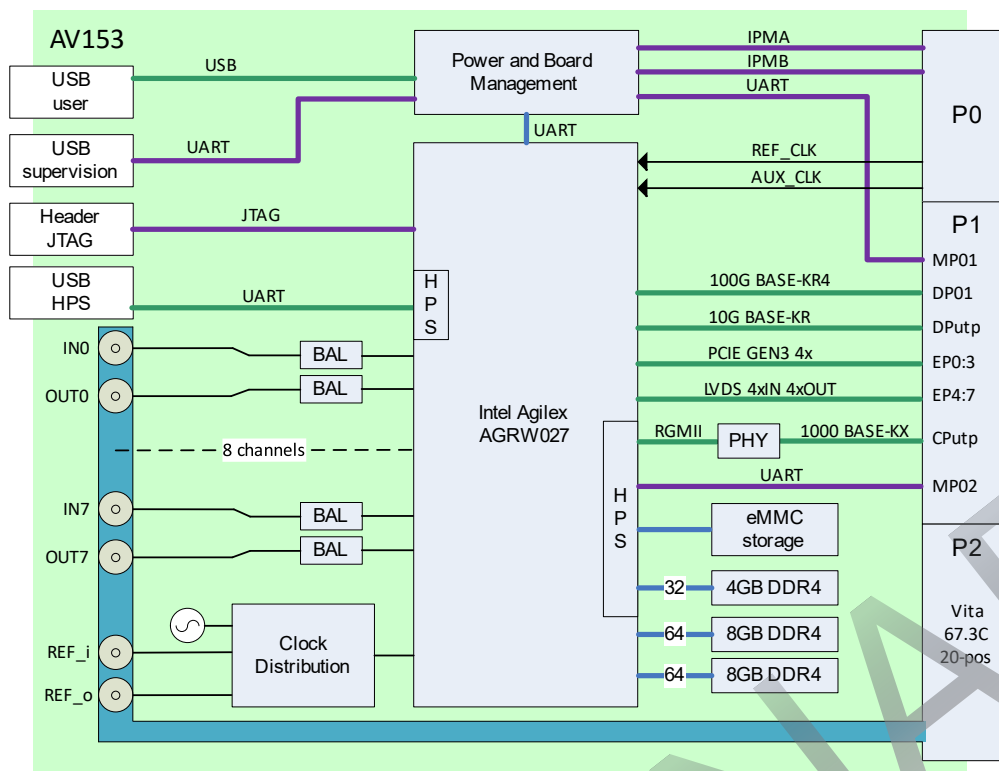
Applications

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

Features

Direct-RF SOC Intel® Agilex® 9 AGRW027
8 channels 64 Gsps 10-bit ADC
8 channels 64 Gsps 10-bit DAC
One Ultra Low jitter clock synthesizer
External or internal sampling clock reference
2x 64-bit 8GBytes DDR4 2400 SDRAM (Fabric)
1x 32-bit 4GBytes DDR4 2666 SDRAM (HPS)
SOSA-aligned





SPECIFICATIONS

Form Factor

3U VPX Conduction cooled Vita 48.2, pitch 1.0"

VPX Profile

SLT3-PAY-1F1U1S1U1U2F1H-14.6.11-12

Analog Input/Output

Input coupling: AC
 Full power bandwidth: 100MHz to 20 GHz
 Full scale: TBD
 Output coupling: AC
 Full power bandwidth: 100MHz to 20 GHz
 Full scale: TBD
 Impedance: 50 Ohm
 Connectors: Vita 67.3 NanoRF

Analog-Digital Conversion

Eight channels, up to 64Gsp/s
 Resolution: 10 bit
 Sampling Performances at 64Gsp/s
 NSD: -150 dBFS/Hz at -3dBFS at 6GHz
 SDFR: -56.19 dBc at -3dBFS at 6GHz

Digital-Analog Conversion

Eight channels, up to 64Gsp/s
 Resolution: 10 bits
 Sampling Performances at 64Gsp/s
 NSD: -156 dBFS/Hz at 0dBFS at 6GHz
 SDFR: -51 dBc at 0dBFS at 6GHz

Clock

Two Ultra-low jitter clock synthesizers
 External or internal sampling clock reference
 Impedance: 50 Ohm
 Connectors: Vita 67.3 NanoRF

Memory

Two banks 64-bit 4GBytes DDR4 2400 SDRAM (fabric)
 One bank 64-bit 4GBytes DDR4 2400 SDRAM (HPS)
 One 2 Gbit QSPI FLASH memory
 eMMC storage (HPS)

Operating Temperature

ECC3, -40°C to 70°C

VPX interface

P1:
 Data plane: one fat pipe DP01 supporting 100GBASE-KR4
 Data plane: one ultra-thin pipe DPutp01 supporting 10GBASE-KR
 Control plane: one ultra-thin pipe CPutp01 supporting 1000BASE-KX
 Expansion plane: one fat-pipe supporting PCIE GEN3 4x
 Expansion plane: 8 LVDS differential pairs
 P2:
 Vita 67.3C Aperture H
 NanoRF Contacts-6.4.5.6.10
 8xIN, 8xOUT, REFIN, REFOUT

Power dissipation

+12V: 14 A max (170W) TBD
 +3.3VAUX: 0.6A max (2W) TBD

Weight

630g TBD

Board Support Package

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

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