



SpaceArts Space Aviation and Defense Industry



2023

About

- ▶ Establishment Jan 2021
- ▶ OSTIM Teknopark Turuncu Bina
- ▶ www.avispacearts.com
- ▶ Maturity Level: Head of Hardware Design Engineering Department
- ▶ Management Skills
- ▶ Project Planning and Programing,
- ▶ Evaluating,
- ▶ Monitoring,
- ▶ Quality assessments,
- ▶ Approved process



About

- ▶ Establishment Jan 2021
- ▶ OSTİM Teknopark Turuncu Bina
- ▶ www.avispacearts.com
- ▶ Expert;
- ▶ 20 years on Space/Air/Navy Borne Payloads,
- ▶ High Performance Printed Circuit Board Design and Digital Circuit Design,
- ▶ Product Development
- ▶ Board Level
- ▶ Module Level
- ▶ LRU Level



Applications

- ▶ **Space / Satellites**
 - ▶ RASAT Project : Payload Design
 - ▶ GÖKTÜRK-2 Project : Payload Design
- ▶ **Aviation EW**
 - ▶ Fighter : Fixed Wing Payloads / Electronic Warfare
 - ▶ Rotary Wing Payloads / Electronic Warfare
- ▶ **Defense EW**
 - ▶ Navy : Frigate Payloads / Electronic Warfare
 - ▶ Navy : Corvette Payloads / Electronic Warfare
 - ▶ Algorithm Acceleration via Hardware (FPGA)



Digital Circuit Design

- ▶ In the consideration of 20 years experiences
- ▶ Verilog HDL
- ▶ Integer, Floating Point Arithmetic
- ▶ Image Processing
- ▶ Radar Signal Processing
- ▶ Statistical Data Processing
- ▶ Scientific Computation



Analog Circuit Design On-Board

- ▶ In the consideration of 20 years
- ▶ ADC Front End
- ▶ DC-30 MHz
- ▶ 1.4 Ghz-2.8 GHz
- ▶ Multi Channel Phase Coherent 2.6 GSPS RF ADC Board
- ▶ Signal Conditioning
- ▶ Legacy Signal Interfaces
- ▶ DC-DC Convertors
- ▶ CCD/CMOS Camera Electronics



High Performance Printed Circuit Board Design

- ▶ In the consideration of 20 years
- ▶ Production Level
- ▶ Impedance Matched and Stack-up Design
- ▶ Power and Signal Integrity
- ▶ Material Selection Level



System Engineering

- ▶ More than 10 years Maturity Level
- ▶ Radar/IR Electronic Warfare Systems/ Baseband Processing
- ▶ VPX, OpenVPX, PCIe based LRU subsystem architectural design
- ▶ Algorithm Analysis for Computational Power
- ▶ Trade off Analysis : Processor, GPU, FPGA
- ▶ EMI/EMC and Environmental Conformance
- ▶ PCB Level System Engineering



Cardinal Points

- ▶ Gezgin-2 Digital Circuit Design RTL Level (RASAT)
- ▶ Airborne Camera System Design and Camera Electronics Design
- ▶ Electronic Support and Measurement System Modernization
- ▶ Radar Identification Processor RTL Level IP
- ▶ Electronic Intelligence System Design
- ▶ Sampling and Signal Processing Subsystem
- ▶ Mass Storage Hardware



Cardinal Points

- ▶ IMA platform System Design
- ▶ Backplane Circuit Design 3U-6U
- ▶ Carrier Circuit Design PCIe - OpenVPX
- ▶ GPU AMD OpenVPX XMC
- ▶ NXP SBC XMC
- ▶ FMC/ FMC+ Hardware Design
- ▶ OpenVPX LRU Design



Ongoing

- ▶ Next_Gen_Data_Storage for AI
- ▶ Amorphous
- ▶ TSN Based Railway Computer
- ▶ Ultra High Sensitive DF and Spectrum Monitoring System DC-6G
- ▶ TF-X
- ▶ Navy Weapon System
- ▶ Navy Electronic Warfare



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