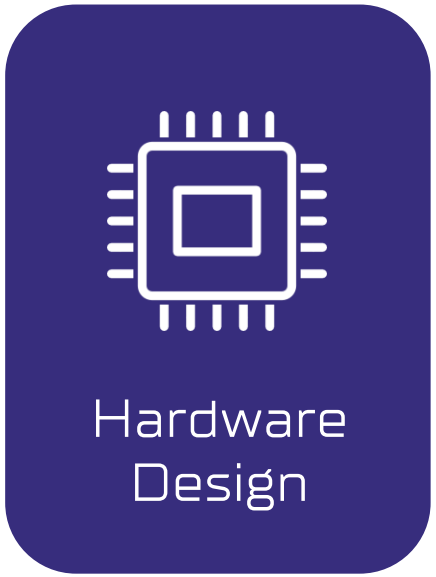
QMAX SYSTEMS

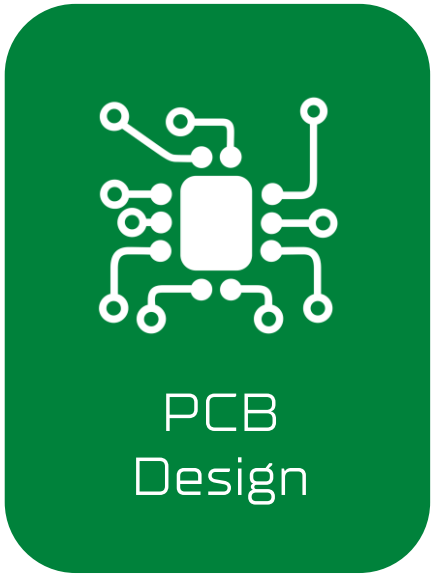
Electronics Engineering Services

Qmax Introduction

- An Electronics Engineering and R&D Services company
- Complete End to End Product Development
- R&D Team in Chennai, India, Sales office in the USA
- Strong Experience in working on Complex, Cutting Edge Technology
- Multi Domain Expertise – Automotive / Aerospace / Industrial / Medical / Defence
- Incorporated in 2000

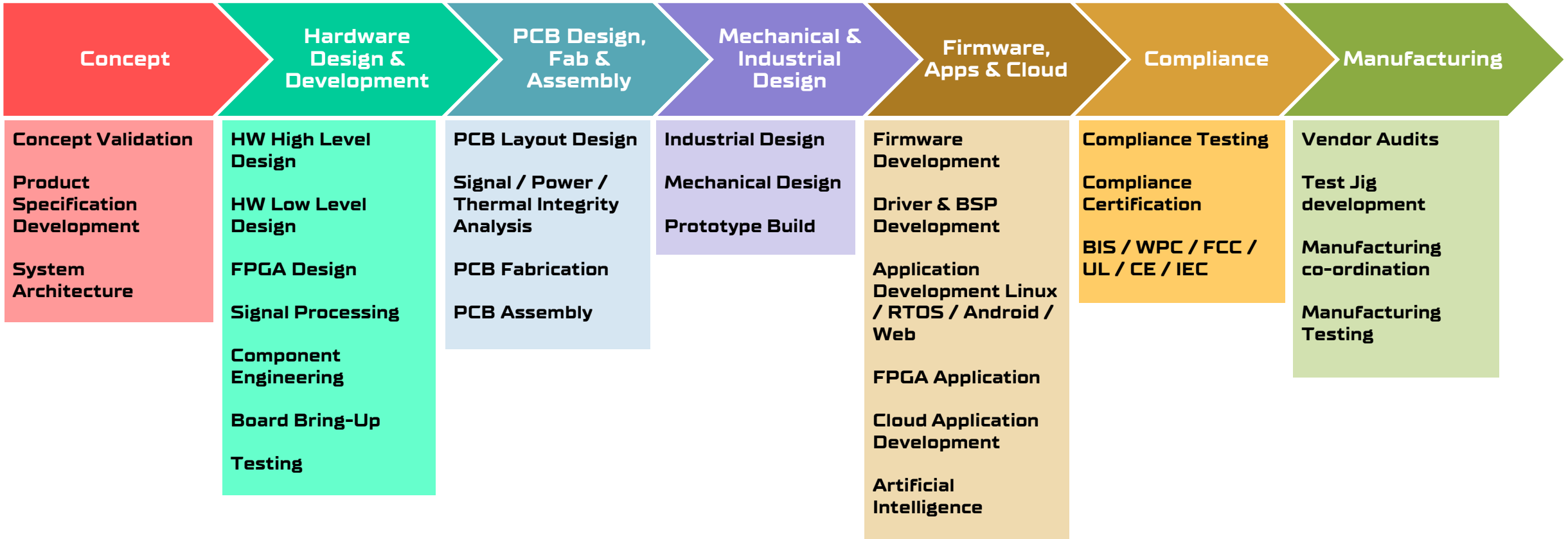
Services Offered



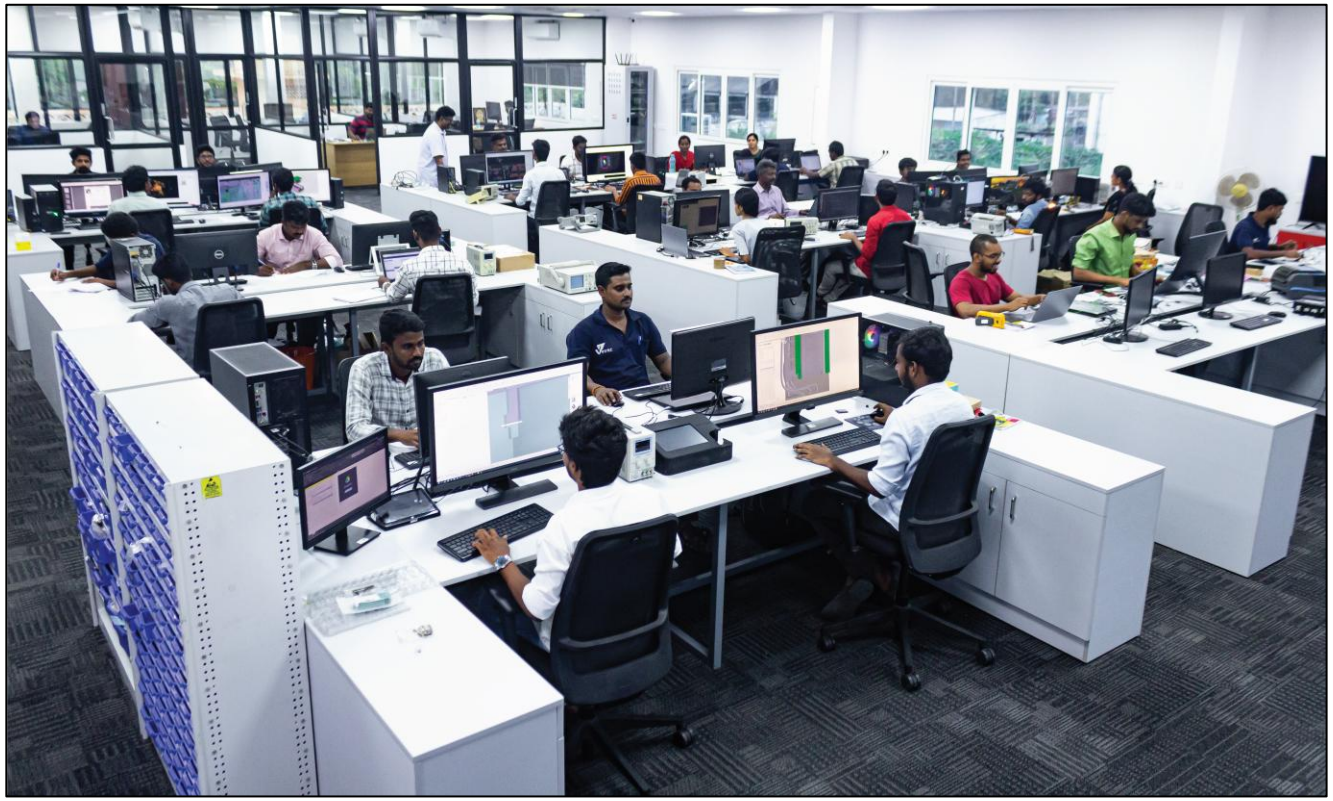


Design to Manufacturing

End to End Product Development Services



Infrastructure



Quality Assurance

- ISO 9001:2015 Certified Company
- Qmax Systems has established, documented, and implemented a Quality Management System.
- The system is maintained and continually improved using the quality policy, quality objectives, internal & external review results, analysis of data, corrective and preventive action and periodic management reviews.

VERITAS

CERTIFICATE

OF REGISTRATION

This is to certify that the Management System of

Qmax Systems India Pvt Ltd

310-2A, Rukmani Nagar, 4th Street, Poonamallee, Chennai -600056, Tamil Nadu, India.

has been assessed and registered by Veritas System Quality Certificates as conforming to the requirements of

ISO 9001:2015

Quality Management System

The Quality Management System is applicable to:

To Provide Electronics Design, Embedded Systems Development, Production & Engineering services as per customer requirements across Industries.

IAF/EA-NACE Code: 19-26.12

Certificate No : VSQC099-42100115 - R1

Initial Certificate Date : 23-07-2022

Re-certification due date: 22-07-2025

Authorised Signatory

Veritas System Quality Certificates Issuing LLC

P.O. Box: 122982, Al Karama, Dubai, United Arab Emirates.

CB-QMS-099

Issue No: 01

This certificate remains valid while the holder maintains the management system in accordance with the standard(s) above, which will be periodically audited by Veritas System Quality Certificates Issuing LLC.

This certificate remains the property of Veritas System Quality Certificates Issuing LLC and must be returned on request. In the issuance of this certificate, Veritas System Quality Certificates Issuing LLC no liability to any party other than to the client, and then only in accordance with the agreed upon certification agreement. Validity of this certificate may be confirmed at www.veritasassurance.com, directly through QR code by using any device with correct information or email to admin@veritasassurance.com.

www.veritasassurance.com

FSC C118414

IP Protection and Data Security

- **Non-Disclosure Agreements:** NDAs with Employees, Vendors and Customers .
- **Firewall & VPN:** Secure network with firewall and VPN.
- **Need-to-Know Access:** Sensitive info accessible only to necessary individuals.
- **Security Awareness:** Regular employee training on data security and IP Protection.
- **Access Control:** Only authorized personnel can access premises.

In-House Test Equipment

- Keysight Oscilloscopes
- Rohde & Schwarz - Wideband Radio Communication Tester - CMW-500
- Fluke Digital Multimeters
- Rigol Programmable Function Generators
- Rigol Programmable Power Supplies
- FLIR and Uni-T Thermal Cameras,
- Uni-T IR Thermometers,
- Fluke Temperature Logger
- Temperature Chambers,
- Acoustic Testing Chamber
- Drop Test Chamber

Hardware Capabilities

Hardware Capabilities

- High-Speed Digital Designs
- Analog and Mixed Signal Designs
- Power Electronics
- RF Designs
- FPGA Based Designs

Embedded Firmware Capabilities

Firmware Capabilities

	Embedded	OS	Apps & Cloud
Capabilities	• Bare Metal C , C_++ • Boot loader • OTA FW Upgrades • Protocol Stack • Low Power & Memory design • Boot time optimisation • Rich GUI • Micro Python	• RTOS • Embedded Linux • Device Drivers • Video/Audio/Camera • Wi-Fi/BLE/LTE • Routers – OPenWRT	• IOT Platform • Edge Processing • Web & App Dashboard • REST API • MEAN Development
Security	• Secure Boot • TPM	• Secure boot • TPM • SSL / SSH • Encrypted Disc	• HTTPS • Secure MQTT • SSL User login

PCB Design Capabilities

PCB Design Capabilities

- Schematics Entry
- Library Development : Schematic Symbol / PCB Footprint / 3D Model
- Layout Design
- SI / PI / EMI Analysis / Thermal Analysis
- High Speed Digital / Analog and Mixed Signal / RF Designs
- High Voltage / High Current / Power Electronics
- Solid Expertise in Compliance standards - IPC, UL / FCC / IEC / BIS

Mechanical & Industrial Design Capabilities

Mechanical Design Services

- Plastic Enclosure Design for Electronics
- Machined Aluminium / Sheet Metal / Extruded Enclosures
- Rugged Metal Enclosures for Military Application – MIL-STD-810 / JSS55555
- IP Rated Enclosures – IP65 / IP 67 / IP68
- Full Mechanical Systems Design
- DFx – Manufacturability / Cost / Assembly / Compliance
- Thermal Analysis / Structural Design and Analysis – Vibration / Impact / Drop

Industrial Design Services

- Design Research
- Product Story and Sketches / Product Visualization
- CAD and 3D Modelling
- UI & UX design
- Photorealistic Images / Photorealistic Product Animation Videos
- Rapid Prototyping – CNC / FDM / SLA / SLS / Vacuum Casting

FPGA Capabilities

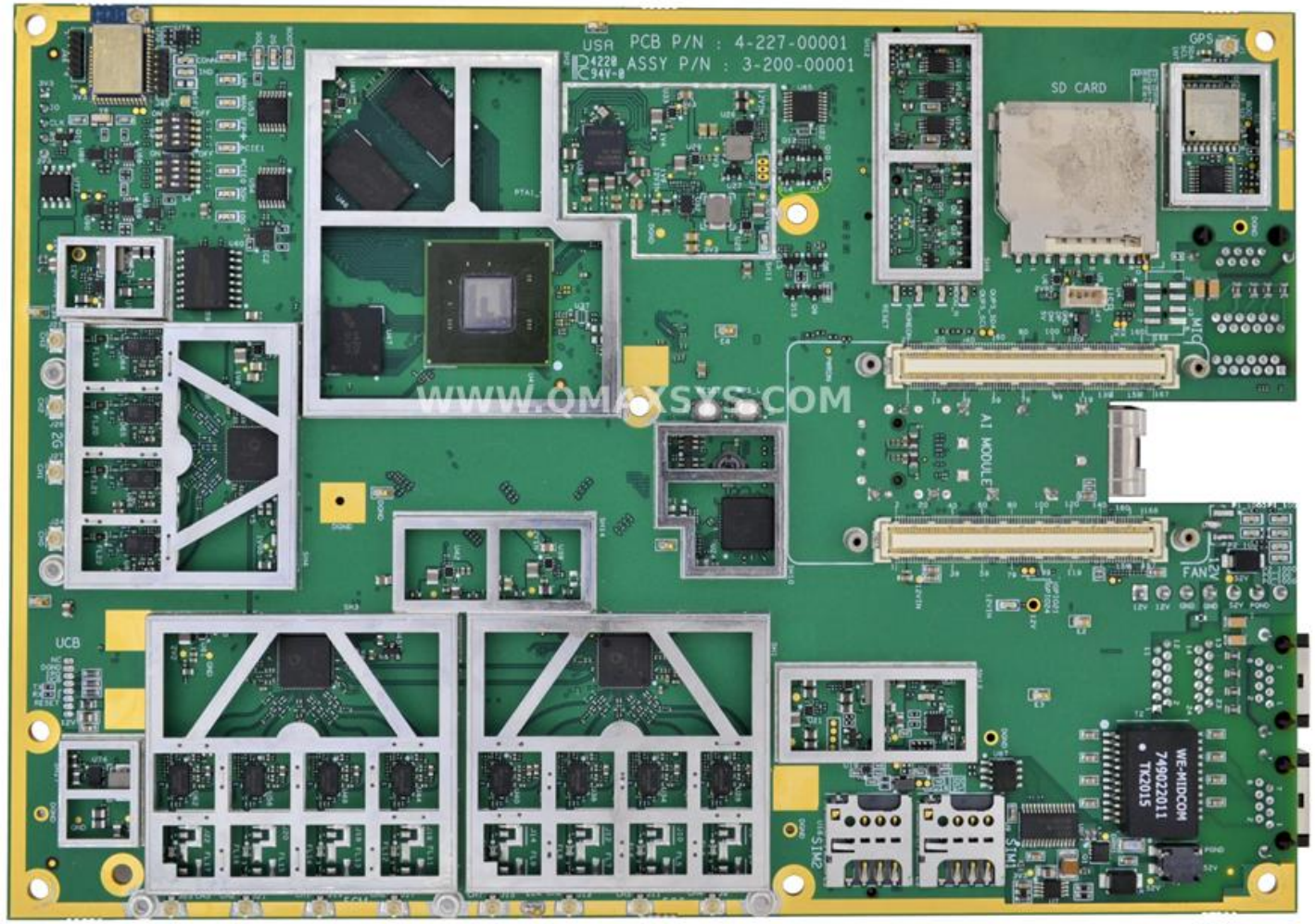
FPGA Design Services

- FPGA Design and Development
- FPGA Prototyping and Testing
- Custom IP Core Development
- FPGA-based System Integration
- Migration and Optimization Services
- Combined Experience of over 30+ years in FPGA Design
- Cross Domain Experience – Telecommunications / Automotive /Aerospace / Industrial Automation / Consumer Electronics / Medical Devices

Product Design Case Studies

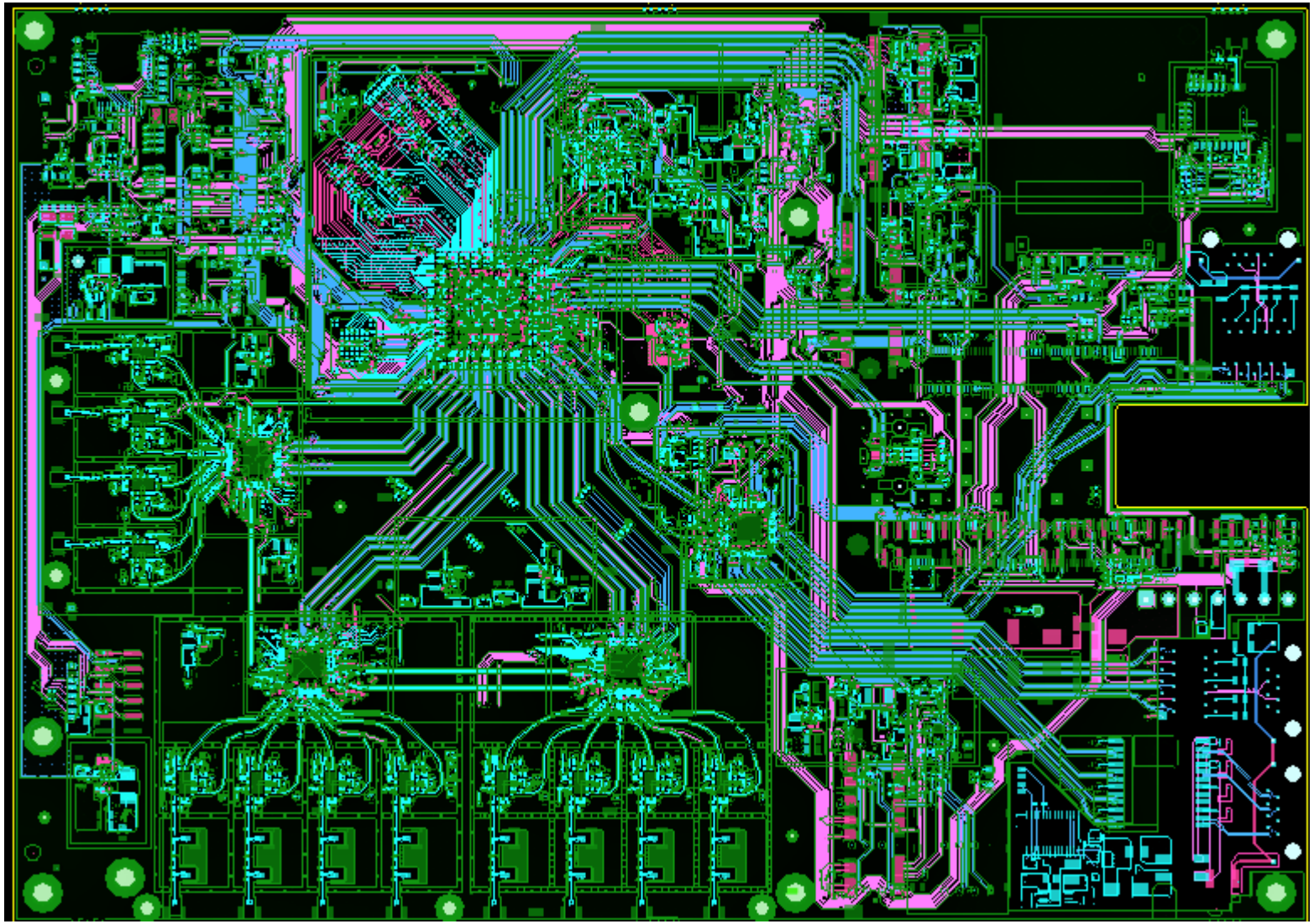
11ax Wireless AP - HW Spec

- Qualcomm IPQ8078A SoC
- 8x8 on 5Ghz and 4x4 on 2.4GHz
- MU – MIMO / BLE / SFP+ / GigE
- LTE / GPS / POE / USB / PCIe
- Thermal / SI / PI Analysis
- High Density BGA Packages



11ax Wireless AP - PCB Layout

- Layer count : 8
- High speed digital
- Multiple RF
- 0.5mm Pitch BGAs / DQFN
- EMI / EMC Shielding
- Thermal Design
- Mechanical Constraints

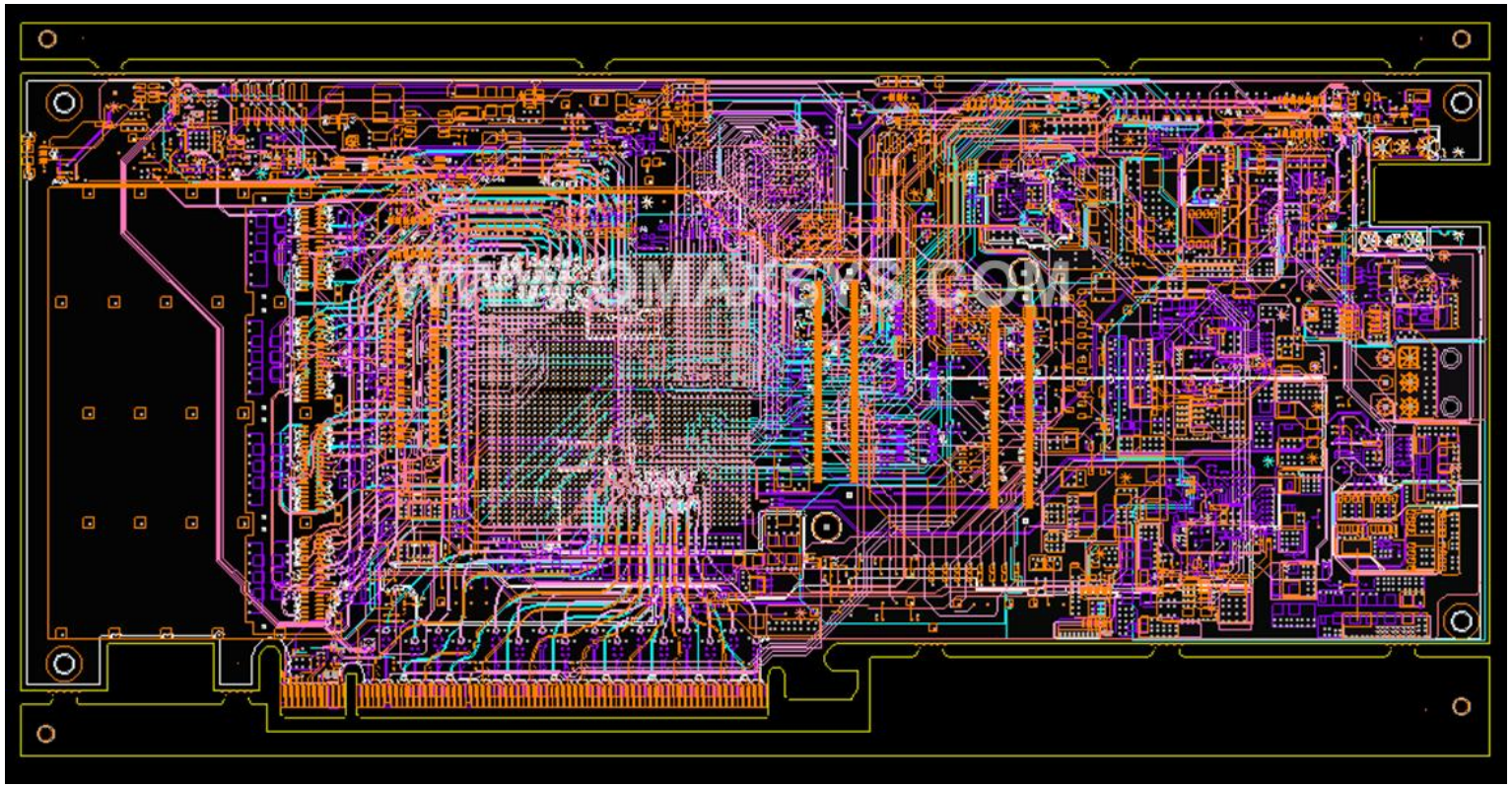


Aerospace Structural Health Monitoring System

- AI enabled Air Frame Structural Analysis
- Altera A10 FPGA
- Digital Signal processing
- Low Power, Light Weight, Compact Design
- Complete HW / FPGA / Enclosure design
- Ultra-Low Noise / SNR of 50dB
- High Speed ADCs / DACs / Sync – E / HV Mux

FPGA based 4 x 100G Interface Card

- Virtex® UltraScale+ FPGA
- Networking Application
- PCIe Gen 5 to QSFP+ x 4
- 1mm Pitch 2104 pin BGA
- High Density
- High Speed
- 16 Layer PCB
- HDI PCB



Rugged RF Power Supply

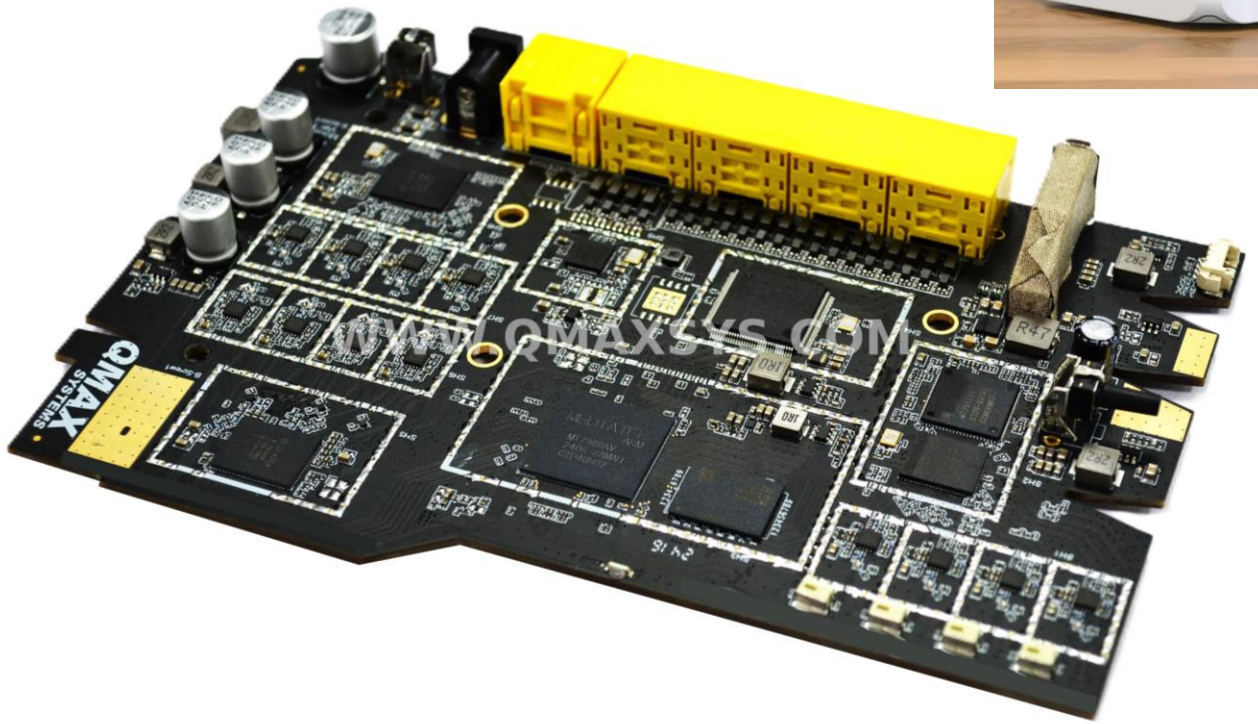
- Plasma Generation Application
- NXP i.MX6UL CPU
- NXP MRFE6VP61K25HR6 Rugged RF Power LDMOS Transistors
- Frequency: 13.56 MHz
- Rated Power: 1kW
- RJ45 / DB25 Communication Ports
- Customized RF Design
- Full Product Development and Delivery

Connected On-board Diagnostic Device

- Full Product Development - HW / FW / PCB / ID
- ARM Cortex A7 CPU / 1 Gb DDR3 / 4Gb eMMC
- Linux / Over the Air Firmware update (OTAP)
- Wi-Fi / BLE 4.1 / LTE-M / GPS / LCD Display
- Native CAN / Ethernet / USB 2.0
- Accelerometer / Magnetometer / LEDS
- 2000mAh Battery / Wireless Charging
- IP 65 Rated ABS Enclosure
- Deployed in GM Garages across USA

Cybersecurity Device

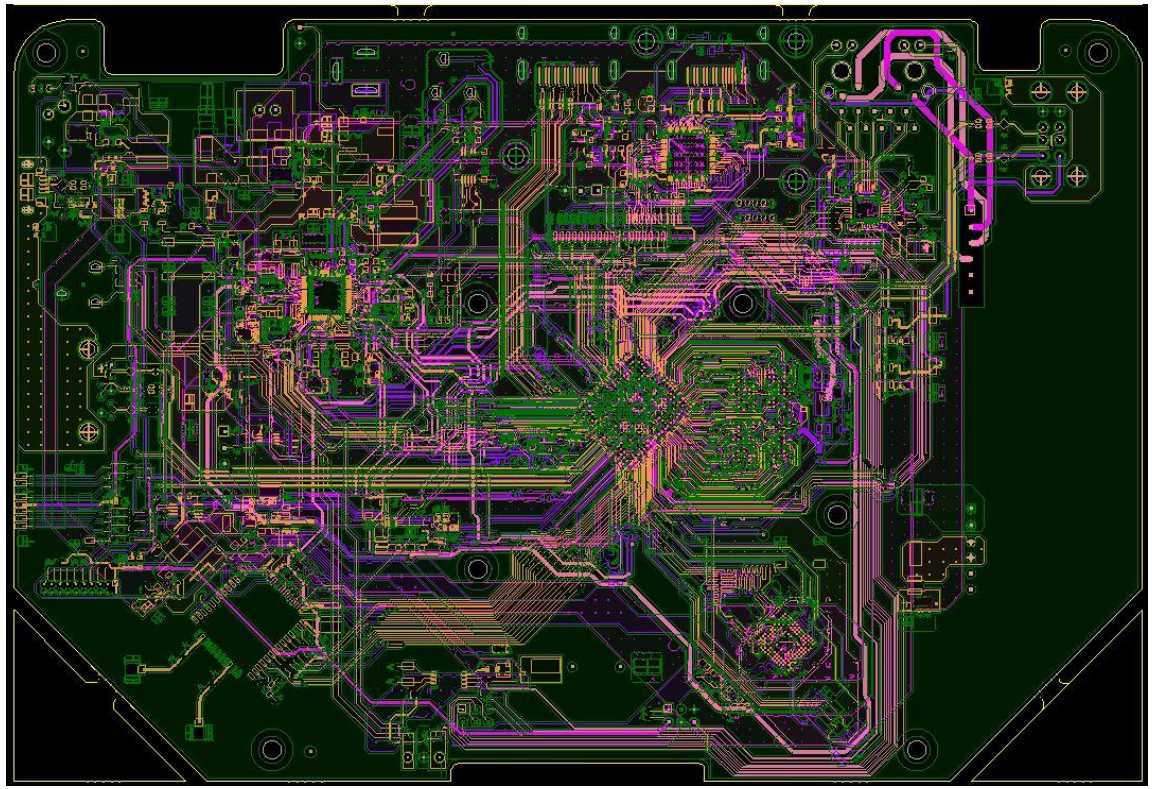
- MediaTek MT7986AV - Wi-Fi 6/6E Router SoC
- Tri-band Wi-Fi: 4x4 -2.4GHz + 4x4 5GHz + 4x4 5.8GHz
- MU – MIMO / BLE / DDR4 / GigE Ports / USB 3.0
- High Density BGA Packages
- Commercial Application
- Full Product Development
- Thermal / SI / PI Analysis
- RF Tuning / RF Calibration
- Prototyping and Testing
- FCC Certification
- Volume Production



Digital Signage with HDMI Input

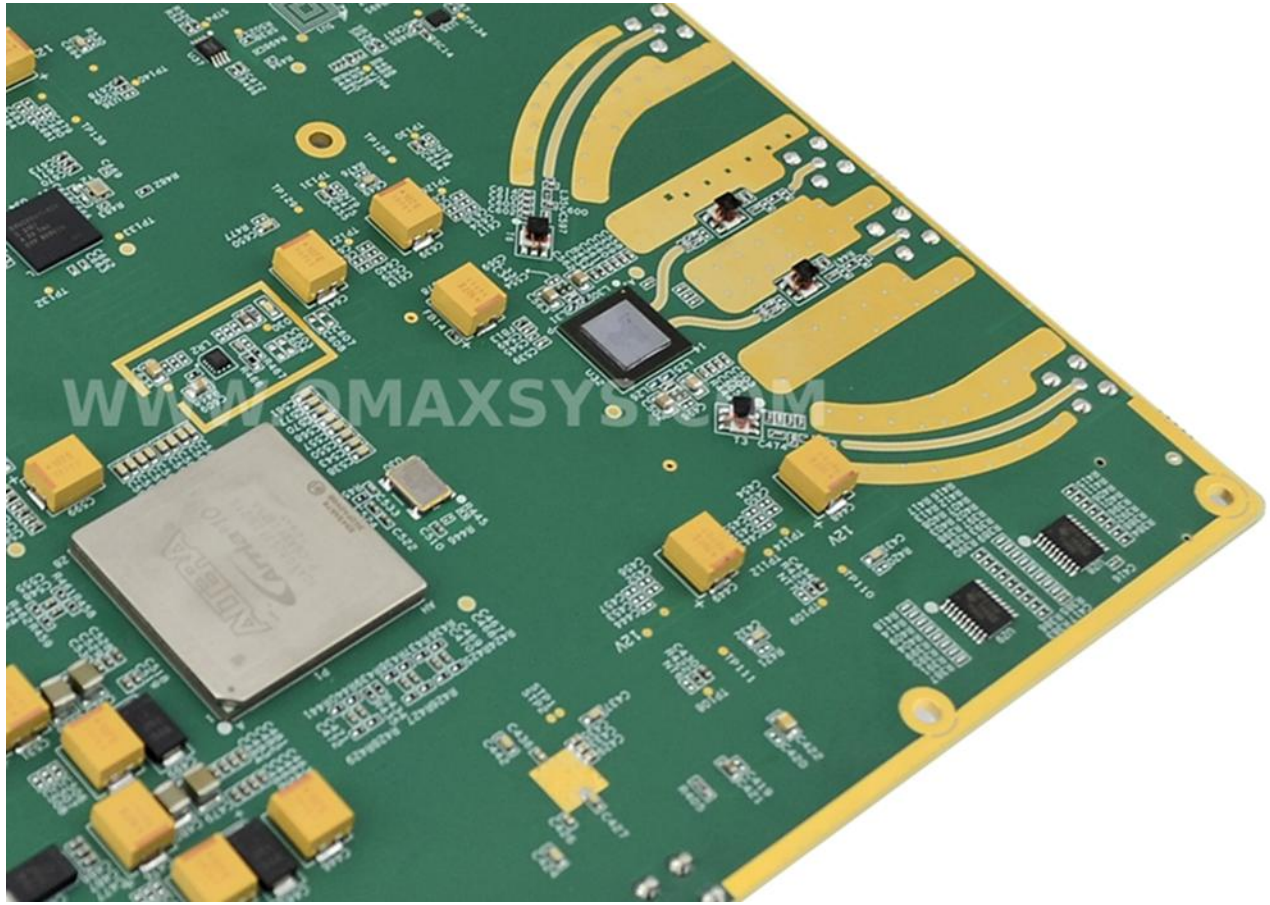
- Full Product Development - HW / FW / PCB / ID
- Rockchip 3568 Chipset
- HDMI Input – HDCP compliant
- POE / 4K HDMI Output / 0.96" OLED Display
- Wi-Fi / Bluetooth / Gigabit Ethernet
- 4GB DDR4 RAM / 16GB eMMC
- USB 2.0 / 3.0
- RTC / IR Remote / Extender
- GPIOs / Audio OUT / Status LED

Digital Signage with HDMI Input



High Speed Analog / RF Board Design

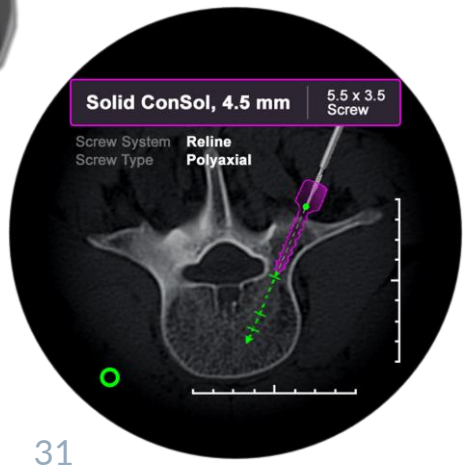
- Arria 10 FPGA
- Software Defined Radio Application
- RF Transceiver : AD9xxx
- 16-bit ADC
- Rx BW: 8 MHz to 100 MHz
- Digital Interface with FPGA (Speed up to 6.4Ghz)
- Dual RX and TX with ORX
- PCIe / Ethernet



Mixed Reality / Image Processing

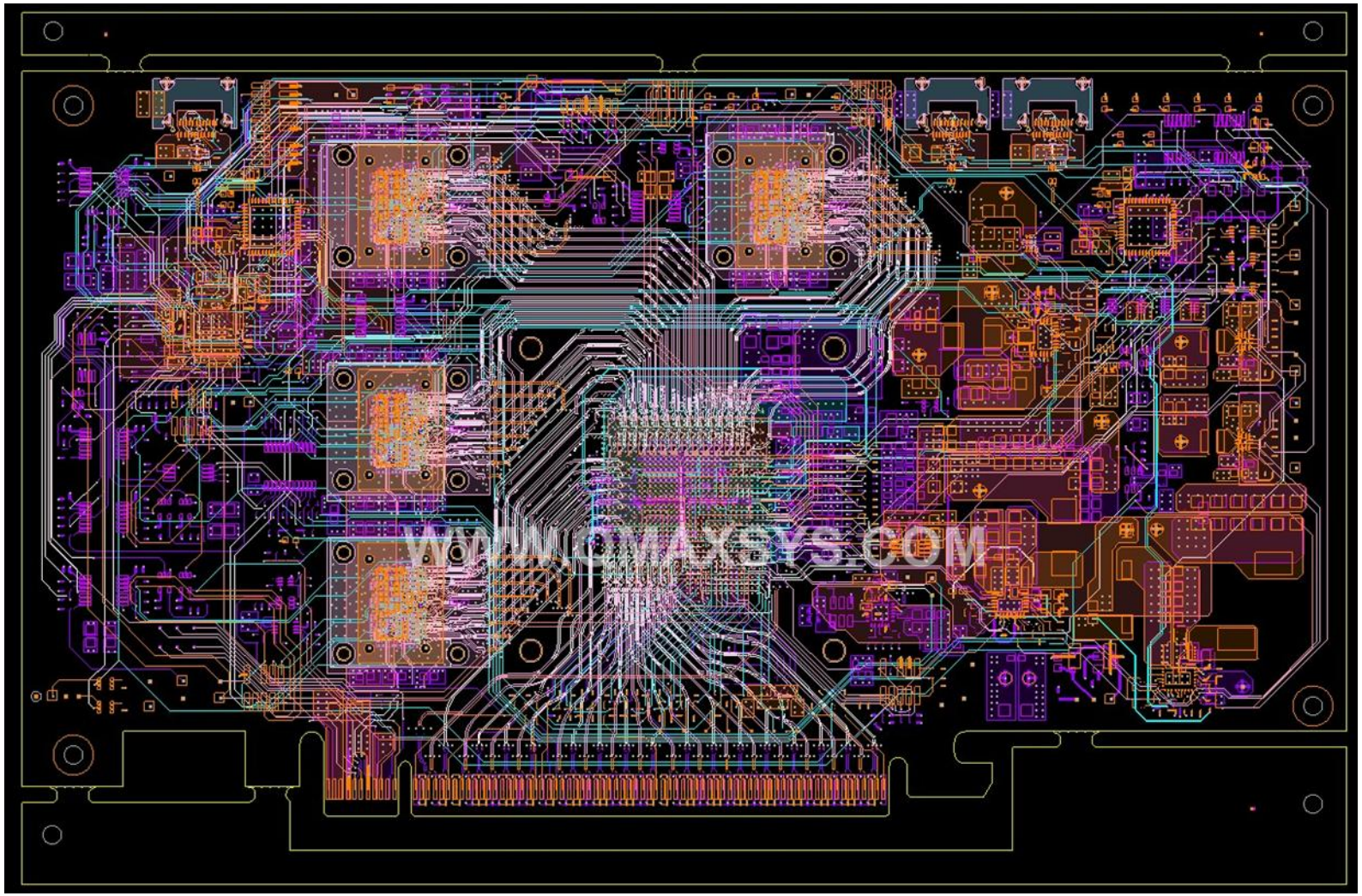
- Zynq® UltraScale+ FPGA
- Medical mixed reality application
- Image Processing Application
- HW Design / FW Development / FPGA SW

Hip Pack Board With Camera Module



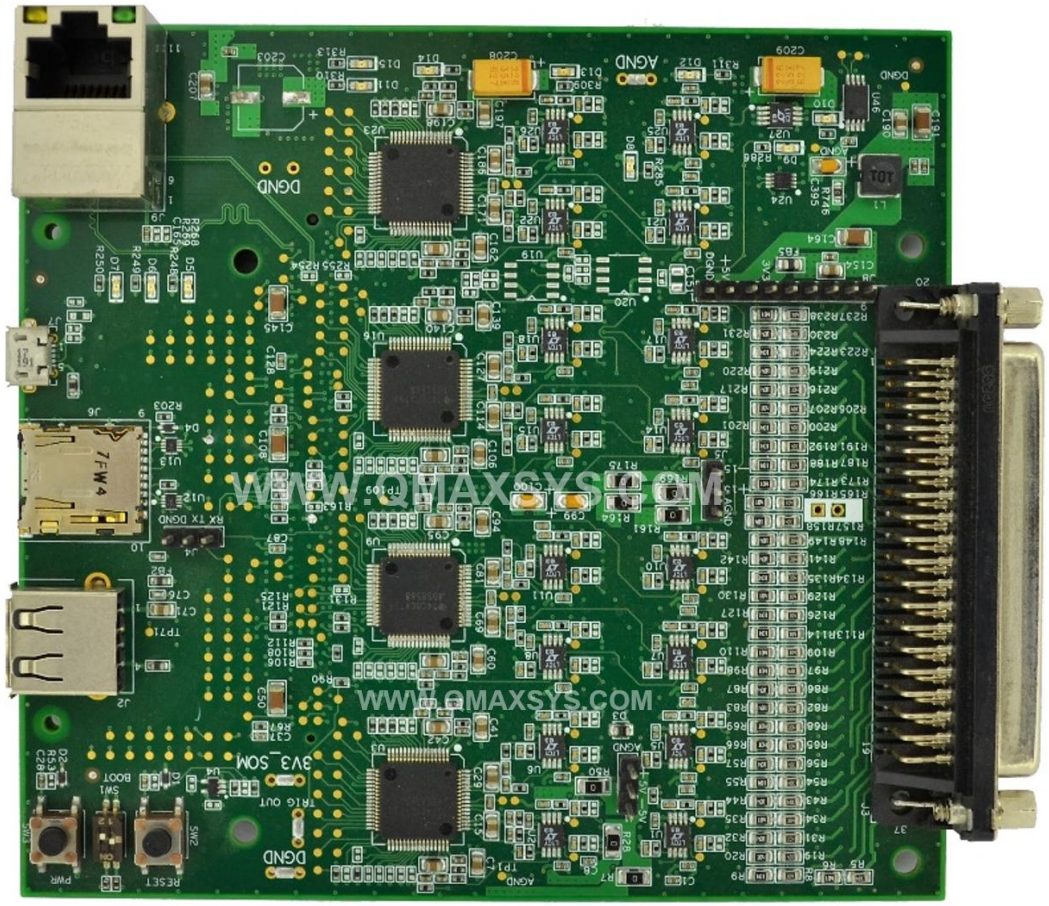
Fabric Interface Card

- PCIe 5.0 to Optical
- 48 PCIe lanes
- PCIe Speed upto 32GT/s
- 0.8mm Pitch 1046 pin BGA
- Optical Engine
- 14 layers PCB, High Power



High Speed Analog Mux

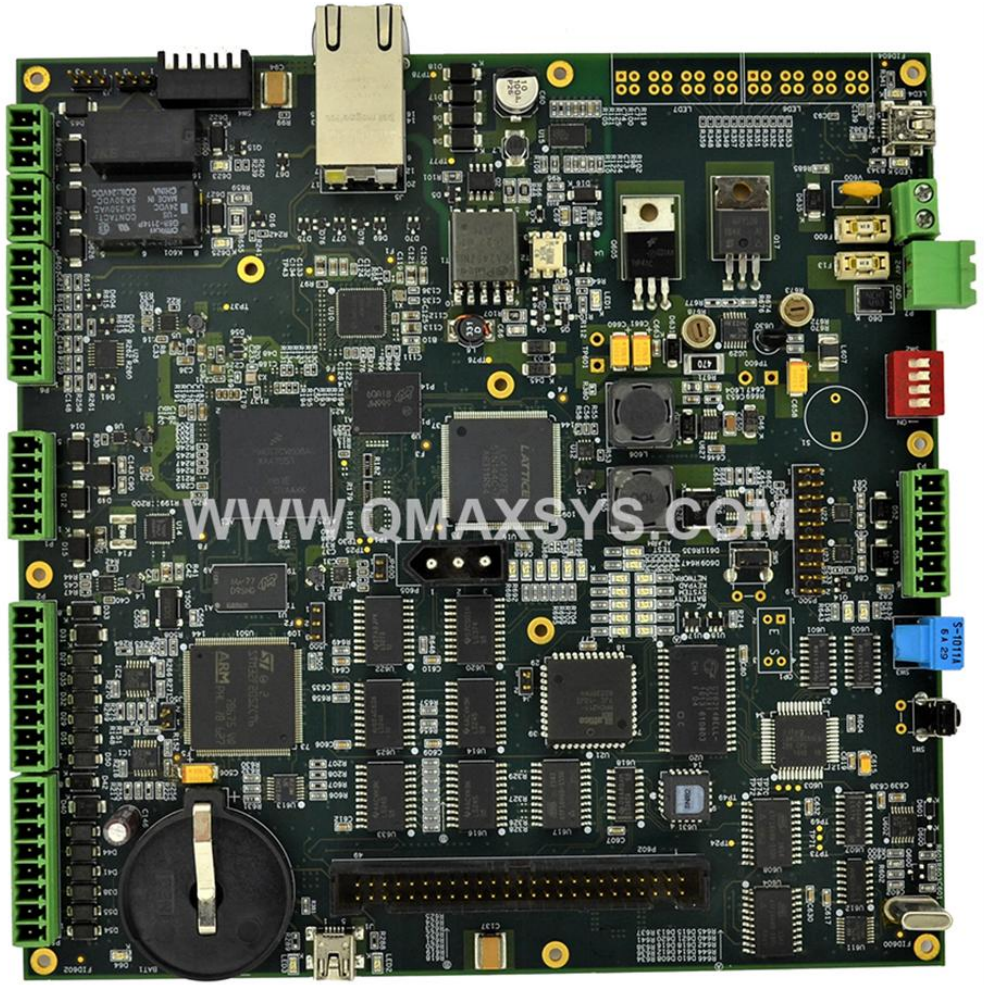
- Hardware / Firmware design and development
- Piezo Sensors / Exciters
- 32 Channel / 16 Bit ADC / 30KSPS, SNR 90 dB
- Mixed Signal / Super low noise
- Linux Driver and Application development
- i.MX6 CPU
- Railways Application



Security System Controller

- Hardware / Firmware design and Development
- IMx6 CPU / STM32 ARM Cortex-M Controller
- Linux / RTOS / Ethernet / DIO / AIO / PoE
- Mechanical / Enclosure Design / DFM
- FCC Class B certified
- BGA ICs / Local Assembly

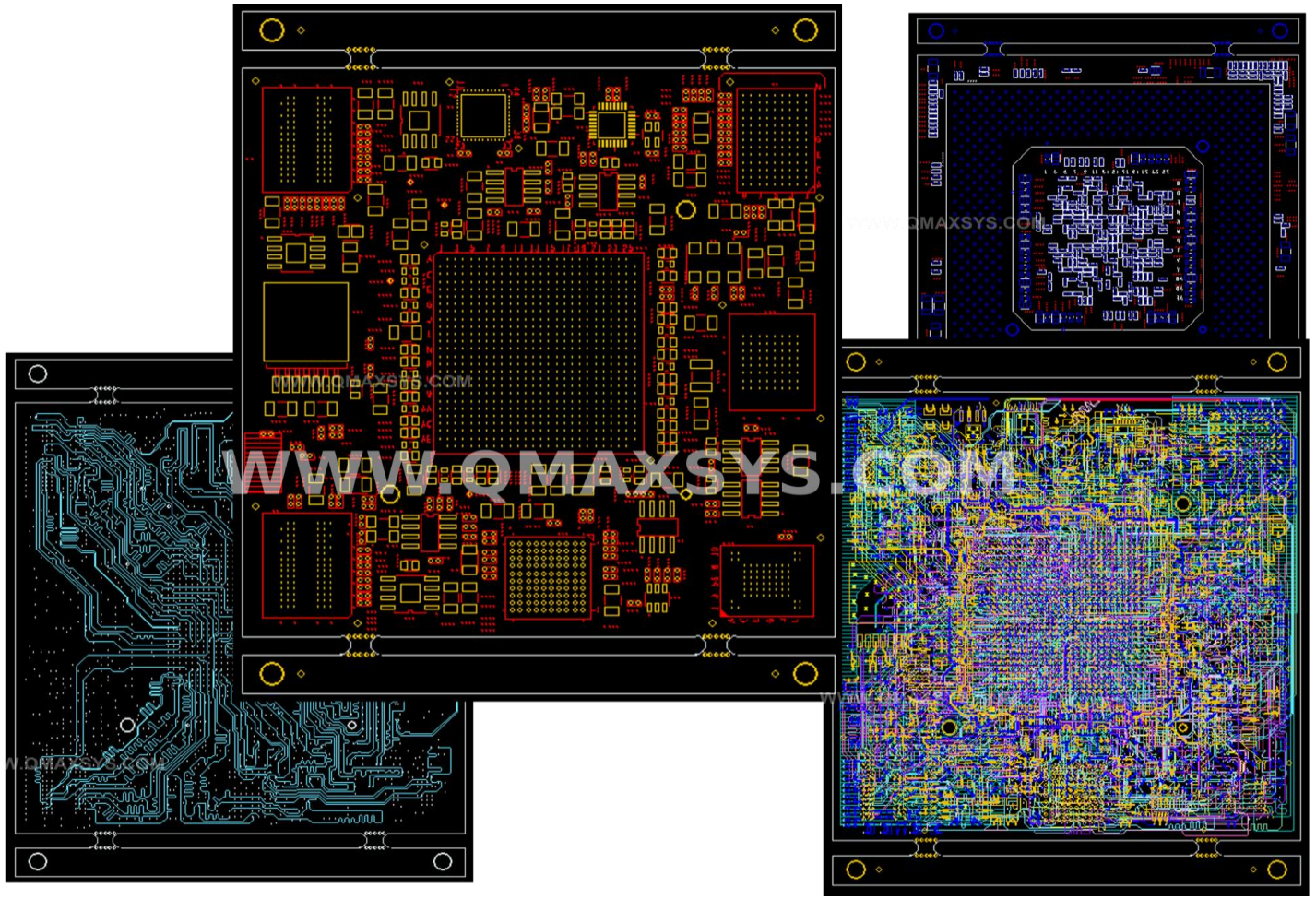
Stackable Design



PCB Design Case Studies

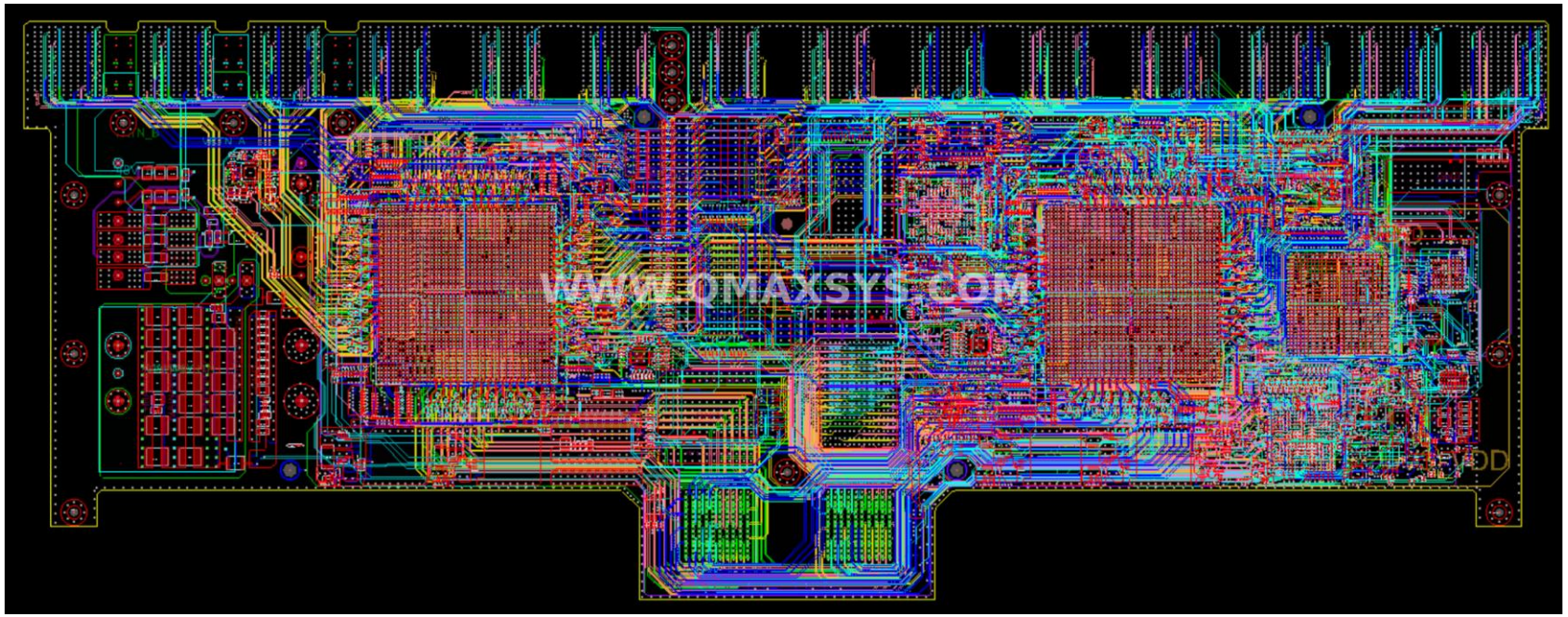
Rugged SBC Board

- Ultra high density – 460 Pins per sq. inch
- Military Application
- 20 layer
- High Speed Digital
- Double side components
- HDI – Blind /Buried Vias



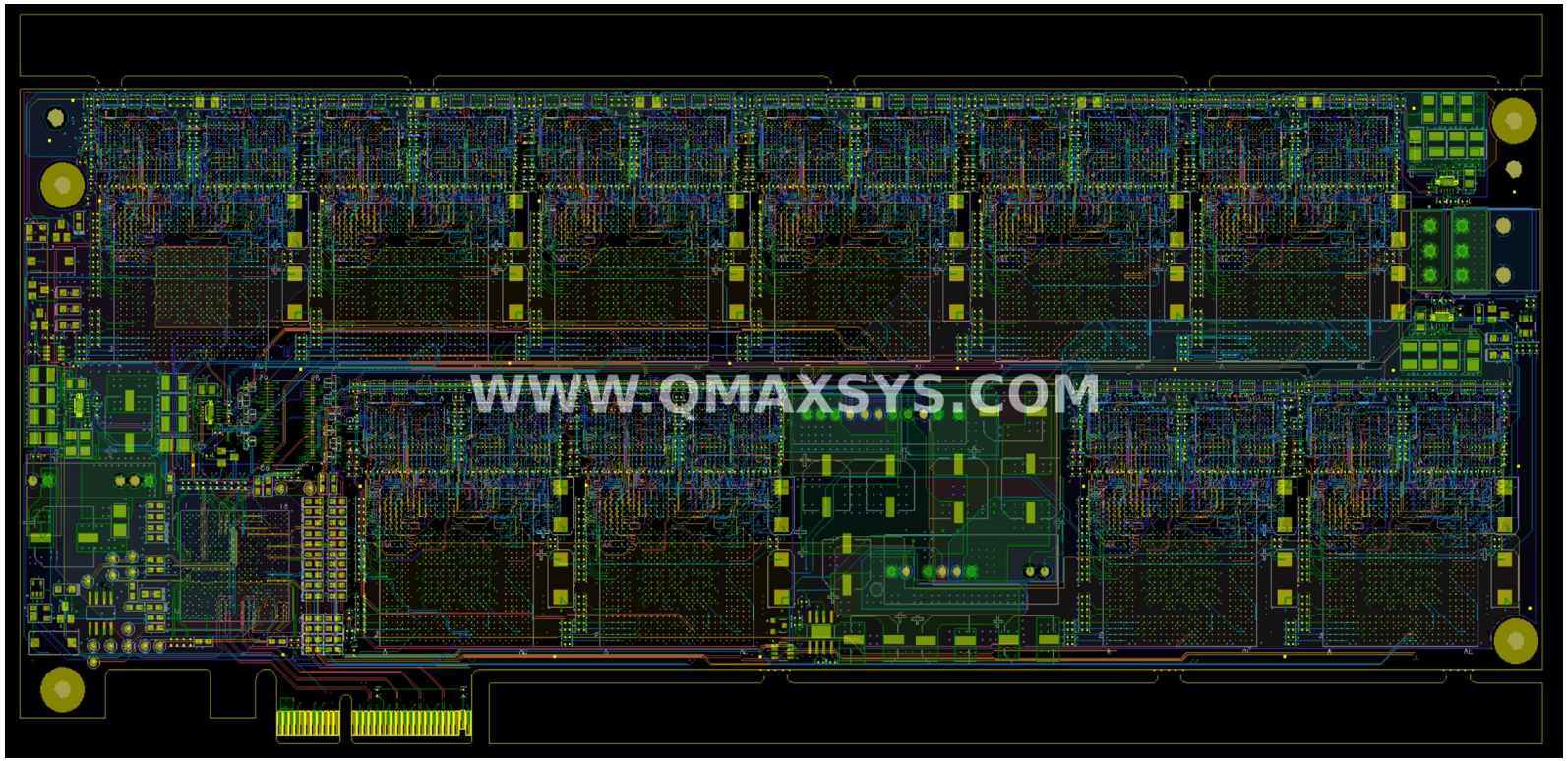
Networking Board

- 100 GBE Switch/Router Board / High speed / DDR3
- 36 layers / 2597 Pins BGAs
- 19705 pins
- Chipset: BCM88650
- High Current
- Ultrahigh density
- Cadence Allegro 16.5



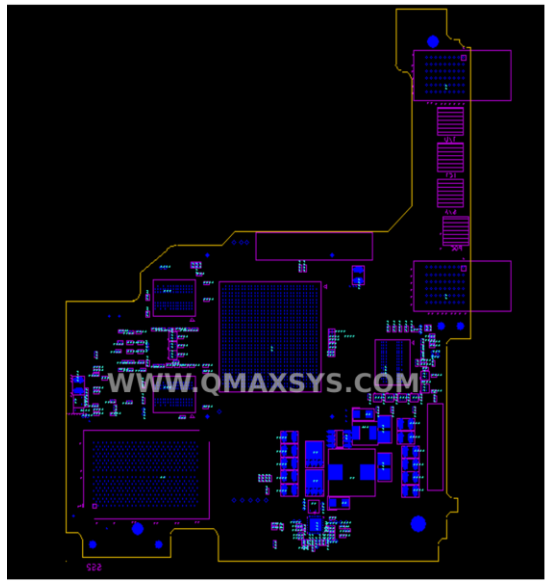
Video Processor PCB

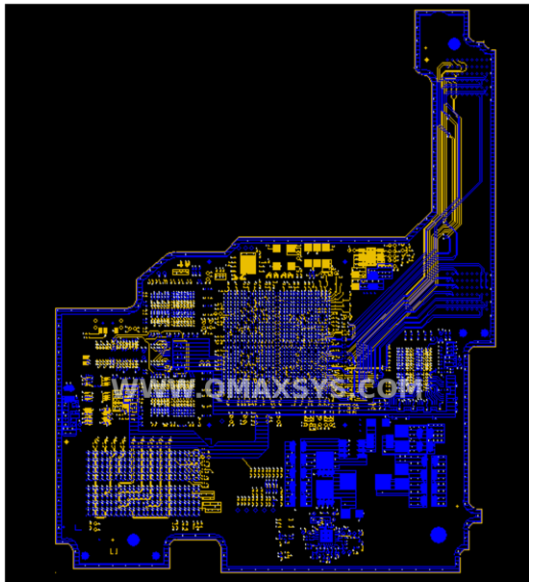
- Video Processing Hardware
- High speed digital / PCIE / DDR3
- Cadence Allegro
- High Current
- Total pin count : 16533

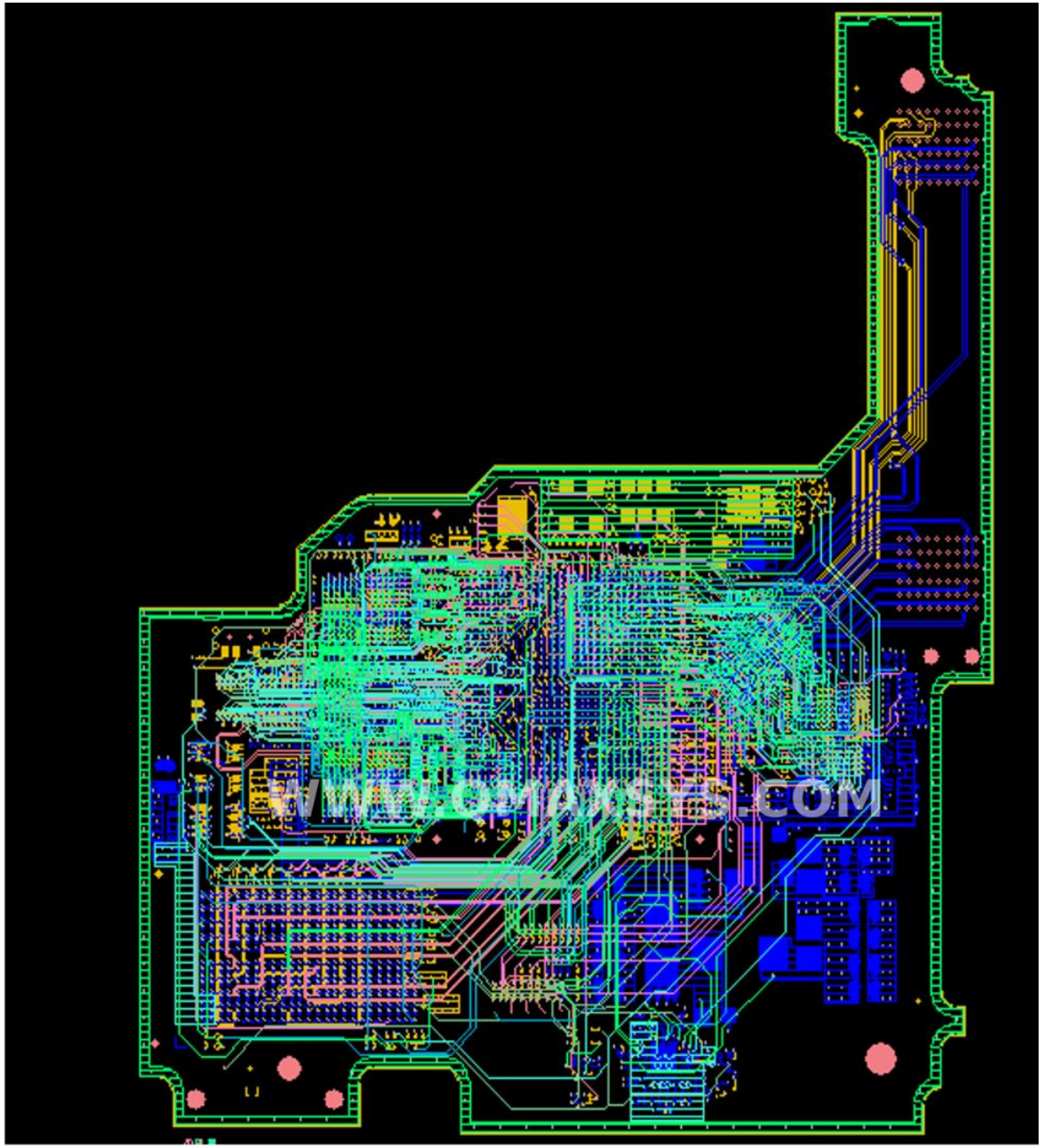


Blade Server NIC

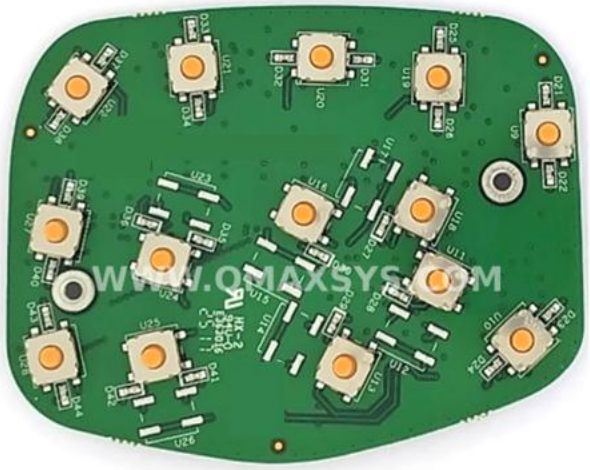
- High density
- Blade server Application
- 14 layers
- High Speed 10 Gbps Ethernet

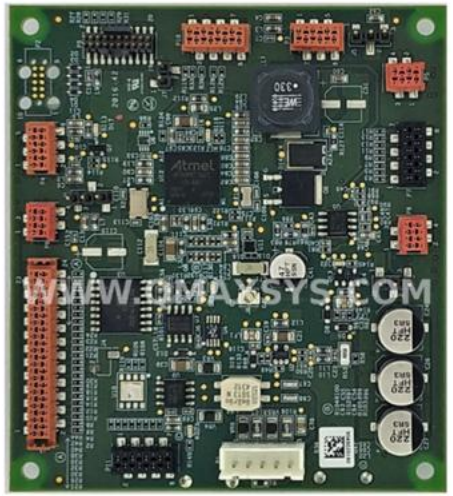


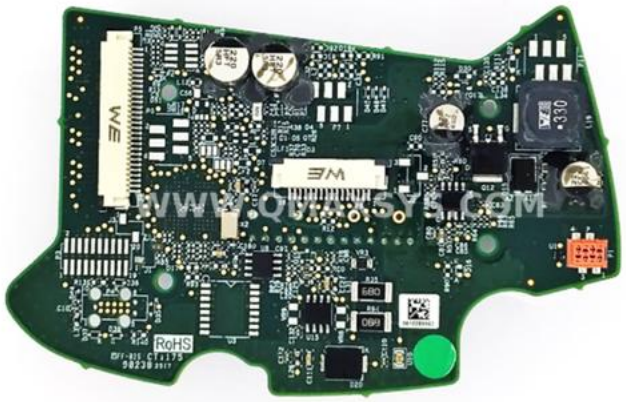


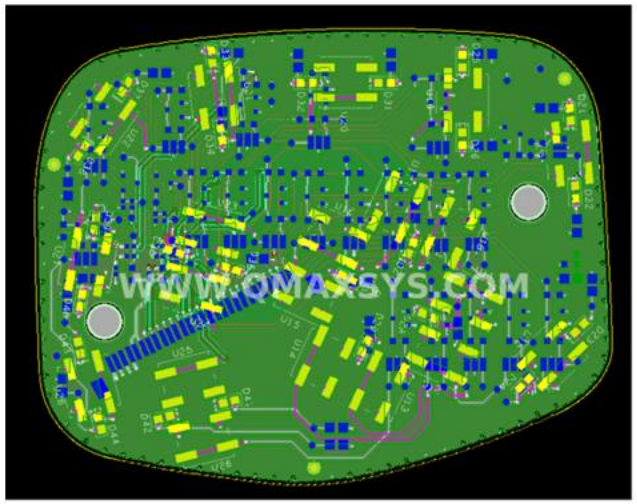


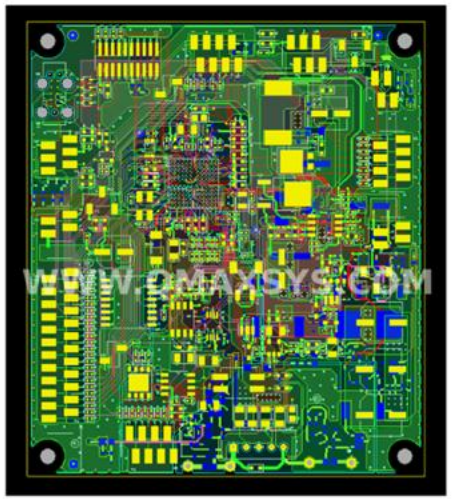
Automotive PCBs

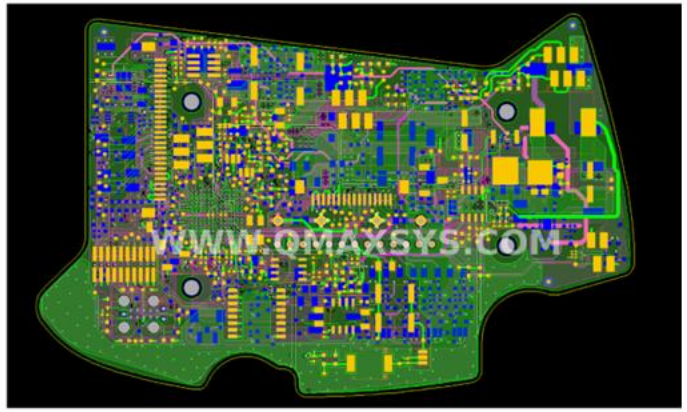












Industrial Design Case Studies

Case Studies

Case Studies

Thanks.!

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