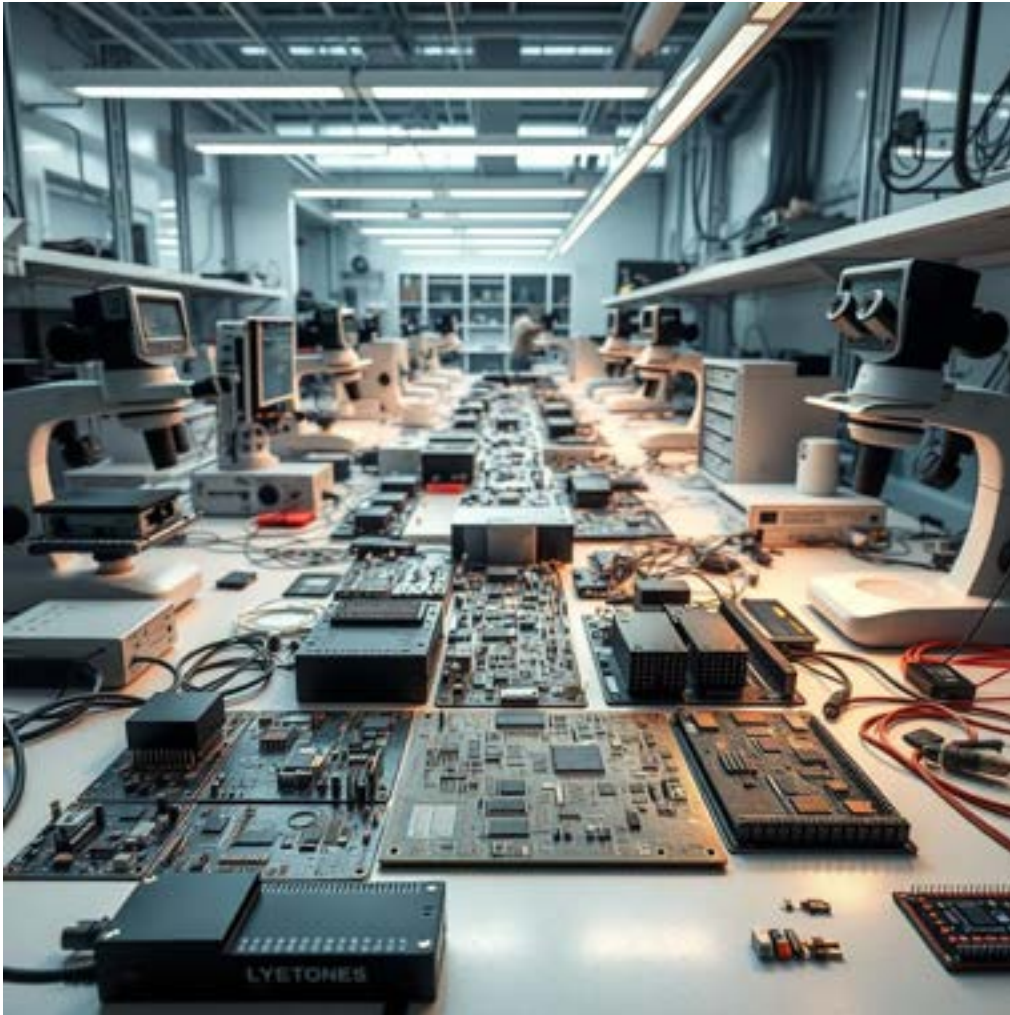




# RF & Radar Systems Engineering

Advanced Subsystem Design and Development

# About Nerve Cells AI



Nerve Cells AI Pvt. Ltd. is a technology company specialising in Embedded Systems Engineering, RF Communication Technologies, and Electronic Product Development. Founded in January 2023, we combine deep engineering expertise with product-focused thinking to design and develop advanced electronics systems for global industries.

Our team works on custom hardware design, embedded firmware, RF communication systems, and intelligent devices, enabling organisations to transform innovative ideas into reliable electronic products.

# Our Mission & Vision

## Our Mission

To create impactful, secure, future-ready technologies that empower industries and improve lives.

## Our Vision

To empower people through intelligent technology and shape a future without limits.

# Our Core Values

At Nerve Cells AI, our culture is driven by innovation, transparency, and measurable impact.



## Innovation & Continuous Learning

We constantly explore new technologies and engineering approaches to deliver impactful solutions.



## Collaboration with Transparency

We believe in strong partnerships with clients whilst maintaining honesty and transparency in every engagement.



## Social Impact

Technology should contribute positively to society and create sustainable value.



## Results-Oriented Execution

Our focus is on delivering measurable results and real engineering outcomes.



## Passion for Technology

Our team is driven by a deep passion for electronics engineering and advanced technologies.

# RF Subsystem Design

- 1** Ku-band RF radar receiver subsystems
- 2** RF up/down-conversion chains to Ku-band
- 3** ERPU (Exciter and Receiver Processing Units)
- 4** Frequency synthesizers for RF and radar
- 5** Transmit/Receive (T/R) modules for phased arrays
- 6** IF switch matrix architectures

# RF Component Design

We design and develop high-performance RF components tailored for radar, communication, and defense applications. Our expertise ensures precision signal control, minimal loss, and reliable operation across wide frequency ranges (up to Ku-band).

Wilkinson  
power dividers  
(2-way to 32-  
way) up to Ku-  
band

Monopulse  
comparators  
for radar  
tracking

Branch-line  
and rat-race  
couplers for  
microwave

Lumped-  
element RF  
filters (LPF,  
HPF, BPF)

# RF Testing & Validation

Signal generators with pulsed & chirp waveforms

Spectrum analyzers for RF parameter evaluation

Vector Network Analyzers (VNA) for S-parameters

Signal generators with pulsed & chirp waveforms

Spectrum analyzers for RF parameter evaluation

Vector Network Analyzers (VNA) for S-parameters

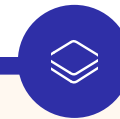
# Why Choose Our Services

We partner with clients to understand unique challenges and deliver tailored solutions through our comprehensive approach.



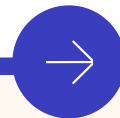
## Integrated Approach

Seamlessly combine expertise across multiple domains from cloud infrastructure to embedded systems.



## Strategic Partnership

More than just providers, we are dedicated partners committed to solving your unique business challenges.



## Expertise & Results

Leverage deep technical know-how and proven methodologies to deliver measurable and impactful outcomes.

# Execution Process

## 1 Concept & Analysis

Initial research and feasibility study to define project scope and requirements.

## 3 Design & Development

Core hardware and firmware engineering, prototyping, and iterative development.

## 5 Optimization & Deployment

Final tuning, manufacturing preparation, and product rollout.

## 2 Planning & Proposal

Detailed project roadmap, resource allocation, and formal proposal drafting.

## 4 Integration & Testing

System assembly, quality assurance, and rigorous performance validation.

## 6 Post-Development Support

Ongoing maintenance, troubleshooting, and continuous lifecycle management.

# Key Dependencies and Support Services

Essential services and infrastructure required for successful project execution and deployment.

## PCB Design and Fabrication

Professional layout design and high-quality fabrication services to ensure reliable hardware architecture.

## Component Soldering (SMD)

Precision surface-mount device assembly and soldering for dense, complex circuit board configurations.

## Circuit Simulation Tools

Advanced EDA and simulation software to validate design integrity before committing to physical prototyping.

## Product Certification

Navigating regulatory standards and securing necessary product certifications for market entry.

## EMI/EMC Testing

Rigorous electromagnetic interference and compatibility testing to meet global regulatory requirements.

## Environmental Testing

Stress testing under varying thermal, humidity, and vibration conditions to ensure long-term device durability.

# Company Snapshot

## Founded

2023

## Team

13+ engineers

## Headquarters

Mohali, Punjab, India

## Contact

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