



Over A Century's Experience In Every Watt

Designing and Manufacturing RF Power Amplifiers (SSPA) & High-Power Microwave Generators

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Company Introduction

Introduction

We are experts in designing & manufacturing RF (radio frequency) / microwave amplification technology



Established in 2014 by former Motorola engineering leaders, Elite RF has set a very high standard in designing and manufacturing solid-state RF power amplifiers and high-power microwave generators for off the shelf availability and custom design solutions. With our in-house engineering team and a quality controlled 22,000-sf manufacturing facility, our core strength lies in our commitment to collaborative engineering, robust designs, high manufacturing quality, and on-time delivery. Here, we're dedicated to boosting your operational performance, aiming to provide you with a significant competitive advantage in the rapidly evolving RF landscape.

Our Mission

Elite RF is committed to delivering high-quality products and services in RF engineering while maintaining the highest reliability, performance, and durability standards. We back our amplifiers with confidence, providing the industry leading warranty. We strive to provide excellent customer service, support, and responsiveness to our clients.

Quality Statement

“Customer Satisfaction is our #1 Priority”
At Elite RF, we prioritize quality and customer satisfaction. Our core strength lies in our unmatched engineering capabilities. With over 150 years of combined experience in power amplifier design and business management, we aim to deliver the most competitive products in the industry.

Leadership Team



GORDHAN PATEL
Chairman

Partner - American Standard Circuits (top 5 PCB fab), American Precision Metals, Lipocine (NASDAQ: LPCN) and more



TIM AVICOLA
President & CEO

Former Motorola Engineering Head, Director at Richardson Electronics, 35+ years of RF Design Experience



PHIL ASELTINE
VP - Engineering

Former Motorola Engineering Head, 40+ years of RF Design Experience



WILLIAM THRAPP

Director – Business Development
Former US Army, Experienced RF Sales Professional



DEEP PATEL
COO

15+ years of business operations and growth, B. Tech (IIT Bombay, India ' 2010)



AMI PATEL
CAO

20+ years of business management, Top 50 Women Leaders of Illinois 2023, Kellogg EMBA '2025





**Low/High
Power RF
(1Watt to 100kW)**

Solid-State RF Power Amplifiers

- Amplifiers from low frequencies to **40GHz**
- Power from **1W to 100kW**
- Class A & Class AB Amplifiers
- CW/Pulsed
- Built in different forms – Module, Rack or Custom Enclosures
- Built-in Protection, Enable/Disable Input, High Reverse Isolation and more features
- Options
 - (-H) Heatsink
 - (-T) TTL Input Trigger
 - (-D) Sub D
 - (-I) Isolator with Forward & Reverse Output

*All MA/MB/MP series modules can be built into AA/AB/AP or DA/DB rack mount systems as required



RF Amplifier Module
Elite RF's MA/MB/MP Series



RF Amplifier Module w/Heatsink
MA/MB/MP series with (-H) Option



19-inch Rack Mount Amplifier
(with built-in heatsink and power supply)
Elite RF's AA/AB/AP Series



19-inch Rack Mount Amplifier
(with built-in heatsink, power supply and display)
Elite RF's DA/DB Series

Custom Product Design & Manufacturing

- From idea on paper to a working prototype to high volume production
– We have you covered!
- Make your RF power requirements a reality



High Frequency
RF generator for
dental application



Wideband
20MHz to 18GHz
RF Amplifier for
military application



High Power 6 kW
amplifier at lower
frequency for cyclotron

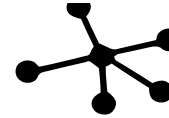
Applications/Markets Served



DEFENSE (EW)



MEDICAL



COUNTER DRONE



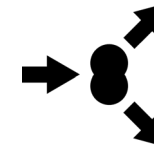
EMI/EMC



RESEARCH



COMMUNICATIONS



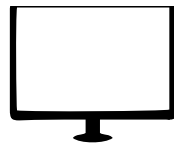
LINAC



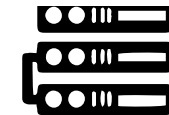
AEROSPACE



PLASMA GENERATION



ADVANCED COMPUTING



INDUSTRIAL MICROWAVES



COMMERCIAL



Elite RF Amplifiers – Gold Series < 18GHz

Part Number	Frequency Min	Frequency Max	Psat (Watts)	Power Gain (dB)	Voltage
MB030512M504850	30 MHz	512 MHz	100	48	50 VDC
MB030512M534850	30 MHz	512 MHz	200	48	50 VDC
MB.026.0G434350	20 MHz	6000 MHz	20	43	50 VDC
MB.502.5G504050	500 MHz	2500 MHz	100	40	50 VDC
MB.502.5G534850	500 MHz	2500 MHz	200	48	50 VDC
MB2.42.5G544850	2400 MHz	2500 MHz	250	48	50 VDC
MB2.42.5G574850	2400 MHz	2500 MHz	500	48	50 VDC
MB1.06.0G454824	1000 MHz	2500 MHz	35	48	24 VDC
MB2.06.0G444828	2000 MHz	6000 MHz	25	48	28 VDC
MB2.0018G434822	2000 MHz	18000 MHz	20	48	22 VDC
MB6.0012G444820	6000 MHz	18000 MHz	25	48	20 VDC
MB6.0018G434820	6000 MHz	12000 MHz	20	48	20 VDC
MP8.011G534828	8000 MHz	11000 MHz	200	48	28 VDC

Off-the-Shelf (COTS) Amplifiers

- 20 MHz to 6000 MHz
- 30 MHz to 512 MHz
- 500 MHz to 2500 MHz
- 2000MHz to 18000MHz
- 6000MHz to 12000MHz
- 6000MHz to 18000MHz
- X-Band
- ISM Bands

CW & Pulsed Signals

Custom Designs available

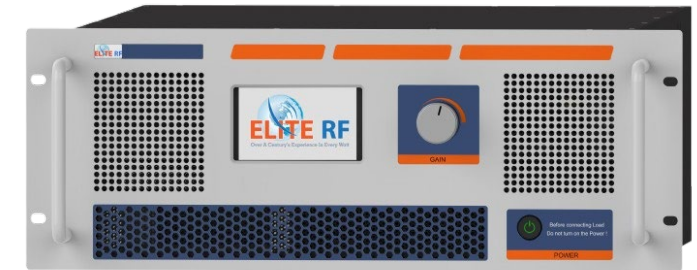
All the above RF amplifier modules can be mounted on air cooled heatsink or in 19-inch rack (with integrated power supply and heatsink). Contact sales@eliterf.com



Elite RF Systems for EMI/EMC Test & Other Applications

Part Number	Frequency Min	Frequency Max	Psat (Watts)	Power Gain (dB)	Voltage
DA1.06.0G5757AC	1000 MHz	6000 MHz	500	57	380 VAC
DB2.0018G5050AC	2000 MHz	18000 MHz	100	50	220 VAC
DA6.0018G5757AC	6000 MHz	18000 MHz	500	53	220 VAC
DA9K400M5353AC	9 KHz	400 MHz	200	53	220 VAC
DA9K100M6565AC	9 KHz	100 MHz	3000	65	380 VAC
DB.021.0G5757AC	20 MHz	1000 MHz	500	57	220 VAC
DA.081.0G6565AC	80 MHz	1000 MHz	3000	65	380 VAC
DB026040G4747AC	26500 MHz	40000 MHz	50	47	220 VAC
DB2.06.0G5353AC	2000 MHz	6000 MHz	200	53	220 VAC
DB2.06.0G5757AC	2000 MHz	6000 MHz	500	57	220 VAC
DB018027G5353AC	18000 MHz	26500 MHz	200	53	220 VAC
DB.076.0G5353AC	700 MHz	6000 MHz	200	53	220 VAC
DA1.030M6060AC	1 MHz	30 MHz	1000	63	320 VAC
DB.502.0G5353AC	500 MHz	2000 MHz	200	53	220 VAC
DA6.0018G5050AC	6000 MHz	18000 MHz	100	50	220 VAC
DB2.08.0G5050AC	2000 MHz	8000 MHz	100	50	220 VAC

DB/DA Series mentioned are EMC systems with front panel touch screen display or customer defined controls. Systems with different frequency bands and power are available. RF Amplifier Modules are available for other applications. Contact sales@eliterf.com or click [here](#) to view details



Elite RF Amplifiers up to 40GHz

Part Number	Frequency Min	Frequency Max	Psat (Watts)	Power Gain (dB)	Voltage
MB1.06.0G474728	1000 MHz	6000 MHz	50	47	28 VDC
MB1.06.0G505032	1000 MHz	6000 MHz	100	50	32 VDC
AB1.5M18G4747AC	1.5 MHz	18000 MHz	50	47	220 VAC
MB2.06.0G505030	2000 MHz	6000 MHz	120	50	30 VDC
AB2.06.0G5353AC	2000 MHz	6000 MHz	200	53	220 VAC
MB2.08.0G494928	2000 MHz	8000 MHz	80	49	28 VDC
MB6.0018G475228	6000 MHz	18000 MHz	50	52	28 VDC
MB6.0018G505028	6000 MHz	18000 MHz	100	50	28 VDC
MB026040G505022	26500 MHz	40000 MHz	100	50	22 VDC
MB033037G474722	33000 MHz	37000 MHz	50	47	22 VDC
MB.703.0G515028	700 MHz	3000 MHz	120	50	28 VDC
MB2.04.0G525228	2000 MHz	4000 MHz	170	52	28 VDC
MB018026G404424	18000 MHz	26500 MHz	10	44	24 VDC
MB013015G474728	13500 MHz	15500 MHz	50	47	28 VDC
MB014015G474728	14400 MHz	15400 MHz	50	47	28 VDC

All the MB modules can be mounted on air cooled heatsink or in 19-inch rack (with integrated power supply and heatsink). More frequency band and power options available. Contact sales@eliterf.com

Solid-State High Power Microwave Generators

- Robust and reliable Solid-State Microwave Generators to replace tube-based technology
- From UHF/VHF to Ku Band (high demand in ISM band)
- System includes Power Supply and RF Generator
- **Microwave Power – from 100W to 100kW (modular design)**
- In-house design capabilities and years of hands-on experience to build custom generators up to 100kW through efficient RF combining techniques



Custom Power
Supply for
RF Generator



6 kW Microwave
Generator Unit



Why Solid-State Microwave Generation Technology?

Problem

TUBE BASED TECHNOLOGY Magnetrons

Inefficient to use where power stability is of high importance for the final product quality

10000+ hours

Yes

Fixed

No

Opportunity

SEMICONDUCTOR BASED TECHNOLOGY Solid-State High Power Generators (SSHPG)

Excellent control on frequency and power output enhancing the final product quality

100000+ hours

No

Full ISM Band

Yes

No process interruptions due to part failure
Modular design
Excellent reliability
Low cost of replacement

EFFICIENCY

LIFETIME

SIGNAL NOISE

FREQUENCY

CUSTOMIZED
SOFTWARE CONTROL

The usage of tubes presents certain limitations. The landscape of solid-state microwave generation is changing rapidly, and the emerging technologies hold the potential to shape the future of this field.

Markets embracing solid-state GaN technology for microwave generation

- Lab Grown Diamonds
- Hydrogen Production
- Semiconductor Processing
- Syngas Production
- LINAC (Linear Particle Accelerator)
- Pasteurizing
- Tempering
- Microwave Ablation
- Plasma Chemical Vapor Deposition
- Rubber Vulcanization
- Biological Waste Disposal
- Plasma lighting
- Textile Processing
- Laser Cutters
- Pharmaceuticals
- Coating systems
- Fiber Optic Preform
- Freeze Drying
- Nuclear Fusion
- Sterilization
- Metalized 3D printing
- Counter Drone Systems
- Directed Energy
- Mass Drying
- Biofuels
- Microwave Assisted Chemistry

Download Whitepaper: [Navigating the RF Energy Shift](#)

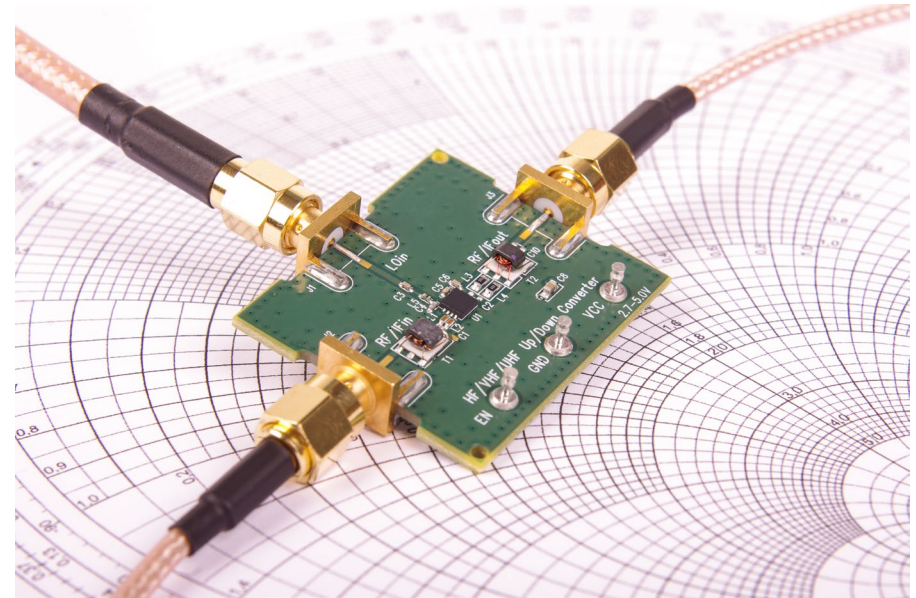




Engineering Capabilities

End to End Design Capabilities

- RF Amplification up to 40GHz and 100kW saturated/peak power
- Over 200 documented and verified “trade secret” designs (used as building blocks to design custom products within 60 days)
- GAN & LDMOS technology
- Basic to multifunction PA modules and systems
- Embedded software and controllers
- Quick Turn Design
- Design for robustness, reliability and longevity
- Strong customer collaboration at every step of design



In House Engineering

- Electrical Engineering
- RF/Wireless Engineering
- Mechanical Engineering
- System Engineering
- Software Engineering
- Project Management

Simulation/CAD

- Linear and non-linear circuit simulation (MW Office)
- 2.5D electromagnetic simulation (MW Office)
- Full 3D electromagnetic simulation (HFSS)
- PCB design and layout (Altium)
- Mechanical design and layout (AutoCAD)
- Solid Modeling (SolidWorks)
- Thermal analysis (Harvard Thermal TAS)
- Reliability analysis and MTBF prediction (RELEX)
- LabView



High-Power RF System Design & Production*

* Example of a Design Proposal – Details are confidential

Expertise in Designing & Manufacturing High Power RF Amplifier Systems

Example: 352 MHz/ 100kW



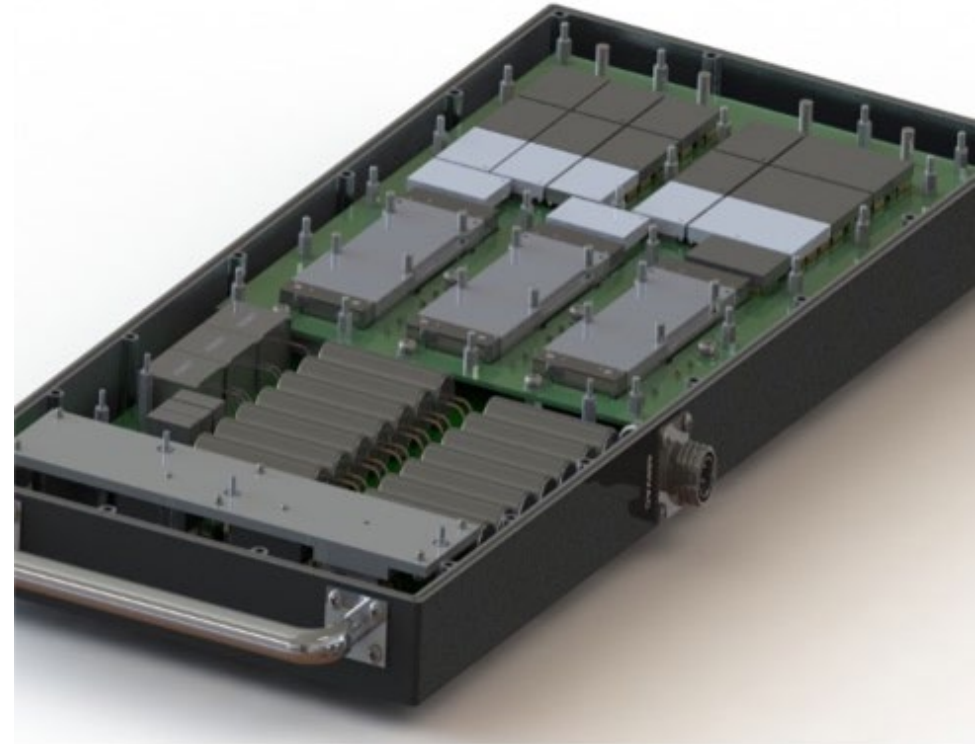
2 KW/352 MHz High Power Module Integrated RF and Power supply

Module Specification

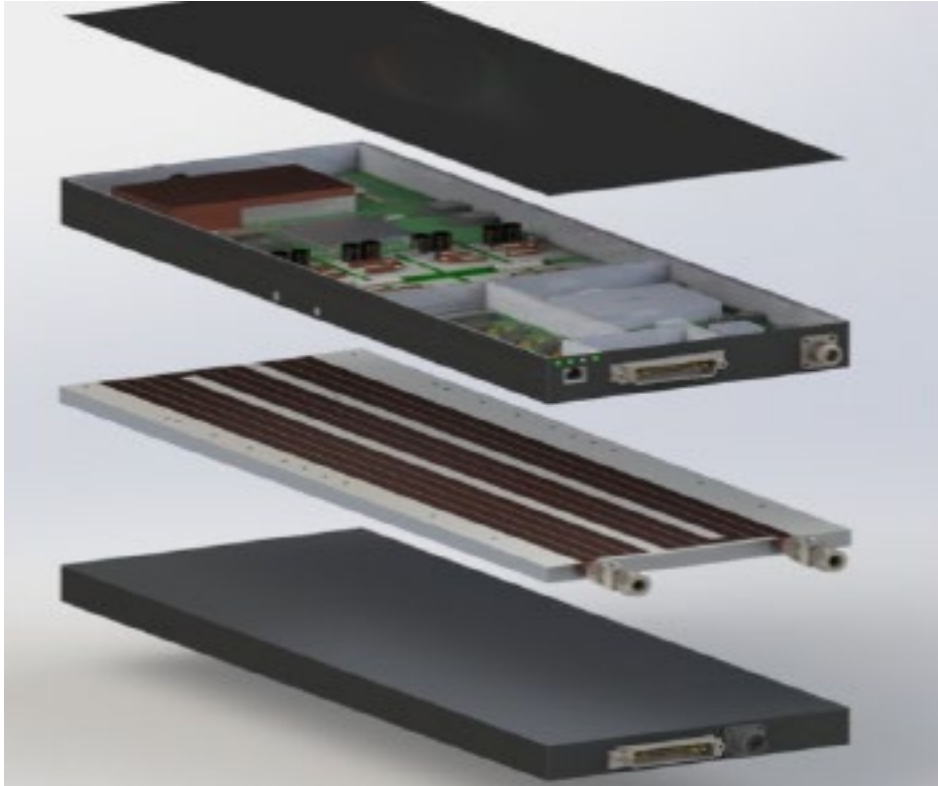
- 348-352 MHz
- 2 KW Psat/CW
- 60 dB gain
- > 60% module efficiency
- Class AB, dual finals
- Phase Control
- Gain Control
- 12C Communication
- Final drain voltage control
- > 94% power supply efficiency
- Hot swap capability
- RF output 7/16 DIN connector
- Water cooled / Amplifier and power supply
- 480 VAC/3 phase input



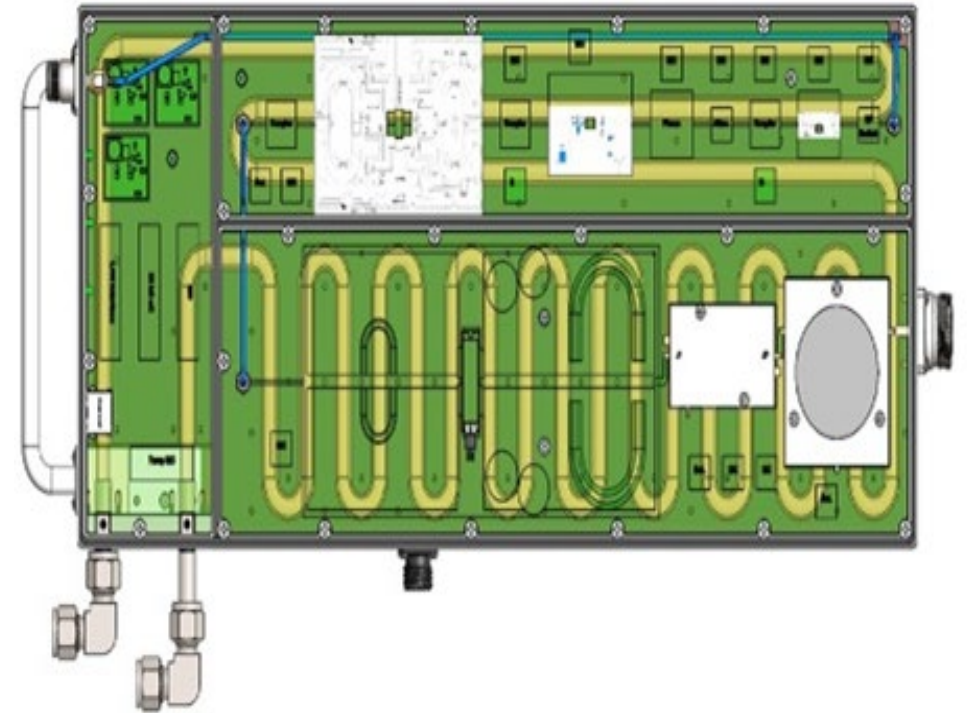
2 KW / 352 MHz High Power Module



Custom Power Supply Design



2 KW / 352 MHz High Power Module Assembly



RF Side Copper Plate / Water Channels

100 KW RF Modular System with Hot Swap Technology



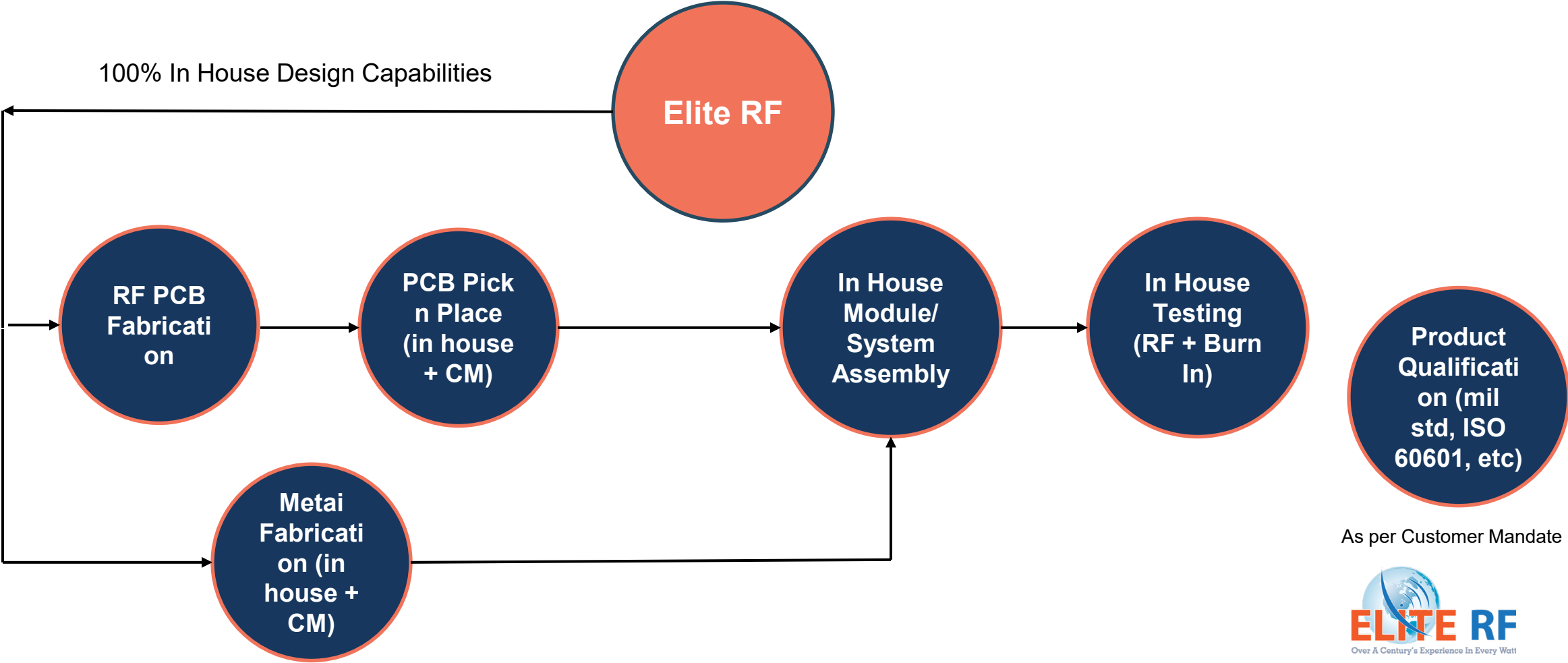
64 / 2KW Modules



Production Capabilities

Manufacturing Partners Ecosystem

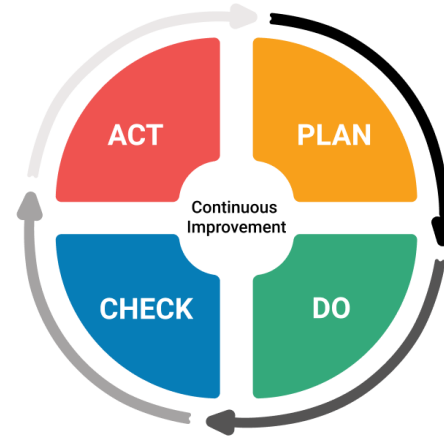
Delivering high-quality high-volume products at rapid pace through common ownership interests across supply chain



High Volume Manufacturing Capabilities

Quality Management Systems

- Our meticulous approach to manufacturing ensures the highest level of quality and customization for our customers. Each amplifier is rigorously tested and documented before shipment to customer.



Strong Vendor Network

- Like customers, we share a strong relationship bond with our suppliers developed over years of working together. Gives us an advantage to offer high quality amplifiers and generators in lower turn around times.



High Volume Manufacturing Capabilities

Production Control

- We maintain in-house control over all amplifier and generator assembly, wiring, housing, testing, and integration processes. PC boards and PC board assemblies are manufactured by our QMS certified Contract Manufacturer only.

Production Capacity

- Our production is currently operating in a quality controlled 22,000-square-foot facility. The facility is designed to achieve high volume production to offer a one stop solution to the customers.





THANK YOU

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