

The background of the entire page is a photograph of various millimeter wave components, such as waveguides and filters, which are precision-machined metal parts. They are arranged on a workbench, with some in sharp focus and others blurred in the background, creating a sense of depth and technical expertise.

**ERAVANT**  
MAKING MILLIMETERWAVE ACCESSIBLE

# WORKING WITH ERAVANT

Making millimeter wave accessible  
Solutions up to 325 GHz



## STATE-OF-THE ART FACILITY

Eravant occupies a newly renovated 60,000 sq. ft. facility just outside of Los Angeles, California. Equipped with amenities like an ISO 8 Cleanroom, two anechoic test chambers, and a high-performance lab, the space is dedicated to our mission of enabling future technology.

### **Microassembly Capabilities**

In order to achieve the extreme performance requirements for millimeter wave active products, teams must be able to work with semiconductors in bare die form. This requires the establishment of a specialized chip and wire lab. Eravant possesses a certified ISO Class 8 Lab to meet the microwave and millimeter wave module assembly and testing requirements for space, aerospace, and military applications. We are equipped with wedge bonders, gap welders, and die-attach stations. These machines are supplemented with plasma cleaner stations and a bond-pull and die-shear machine. All work orders are stored in vacuum-controlled dry boxes to further enhance product reliability.

# 50+

Over fifty  
Scalar Network Analyzers  
(10 MHz to 170 GHz)

# 30

Thirty sets of  
Vector Network Analyzers  
(10 MHz to 325 GHz)

# 20

Twenty sets of  
Spectrum Analyzers  
(9 KHz to 50 GHz)





## Millimeter Wave & THz COTS

### Over 4,000 SKUs and Counting

No other millimeter wave OEM possesses our product breadth. From antennas to amplifiers, our thousands of products are designed, tested, and ready to ship off the shelf. We are the results-oriented engineer's destination for everything through WR-03. Browse our offering with our state-of-the-art website. Create quotes, place orders, and track delivery with full transparency.

### Easy Product Selection

Eravant was the first millimeter wave component company to design and build ahead of customer demand. Investing our own resources to develop a comprehensive catalog of broadband, full band, and high-performance parts, we take the labor of finding the right product out of the procurement process. Rather than working for days or weeks defining exactly what you need, find the right components for your project or prototype with only a few clicks.

### Application Support

Eravant invests in our customers by putting our experts at the front line. Whether you're curious about out-of-band performance or need assistance with your block diagram, our pre-sale support is responsive and unwavering.

### Operational Support

We serve customers working in dozens of industries from aerospace to academia. Turnaround time to accommodate your business practices is unparalleled and ensures that process requirements don't delay your project.

### Quick Customization

With such a vast design library, the time required to tailor a product for your custom requirement is negligible. Whether you require a custom length, a special surface finish, or a more stringent noise figure specification, we can accommodate modifications in a fraction of the time others require for similar changes. In fact, these requests are so feasible that we even have a special name for the category — quasi products.

### Commerciality Studies

Ensuring a fair price is critical to many customers, especially those working in government and A&D. Move through the procurement process with our COTS offering in less than a day. We partner with your purchasing teams to pass commerciality studies with our standardized products.

### Complete Documentation

Unlike other millimeter wave companies who only publish their general capabilities, our COTS products are accompanied by full datasheets with electrical performance and mechanical outline. This is possible because our models are more than hypotheticals.

### Systematic Accuracy

A robust document control process ensures version control and accuracy for the documentation we publish. And when there are changes to form, fit, or function, customers can rest assured they will be personally notified through our Part Change Notification (PCN) process.

We already have the 3D model of the products we offer, so why shouldn't you?

Eravant makes it easy for your team to use our products even during the system design phase. STEP files are available to any member of the public anytime.

### 3-Day Delivery

Engineers working on emerging technology need products fast. In-stock products ship within three days thanks to our dedication to operational excellence. With sophisticated inventory management, a responsive supply chain, and a highly-skilled team, Eravant delivers on speed without sacrificing quality.

### Flexible Delivery Options

However your company buys, we can deliver. From standard domestic and international shipping to will-call at our factory, we'll walk you through the process to ensure parts arrive when you need them.



## Volume Production

The team that created your first article can also deliver at volume. Any of our COTS or custom products can be manufactured at scale. And when there are events that could threaten product continuity, we're able to offer form, fit, and function replacement with minimal impact to your application.

### From a Few to a Few Thousand

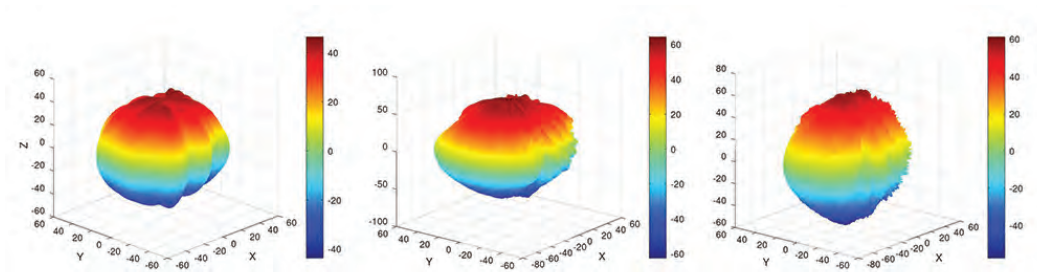
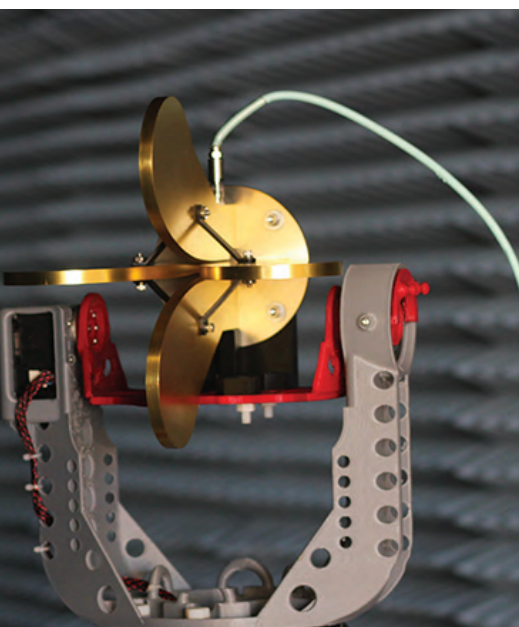
We're an engineering partner at prototype and a manufacturing companion in production. Eravant's design for manufacturing (DFM) approach coupled with our network of resources means we can support customers through ramp up and delivery in the thousands. Imagine how continuity in the product life cycle could benefit your team.

### Ramp Up in Weeks

We use a deeply ingrained approach to our work called the "Five Step Process" that allows us to iterate quickly and take product from concept to production in as little as 6 to 8 weeks. The method controls for variables and uncertainties at each critical step of product development, ensuring a successful result.

### More Costs Less

Pricing at volume can drop by over 60% thanks to our ability to capture economies of scale in production. By employing automation and better manufacturing processes, we can stay competitive as your high quantity partner. Always have a conversation with us about budget when demand starts climbing.



*Radiation patterns at 6 GHz, 23 GHz and 40 GHz for model SAV-0634431050-2F-S1-QR*

### Every Unit is Inspected

Our team checks every piece of hardware delivered at outgoing inspection, even if there are hundreds or thousands. Each component is tested, documented, and approved before it leaves our facility. To mitigate error and compromised interest, quality is always verified by a department independent of manufacturing.

### Sophisticated Supply Chain

Eravant built its supply chain to have the same characteristics that define us: a commitment to quality without compromise to speed and broad capability. Our supply chain partners are constantly innovating to keep up with the challenging demands of mmW manufacturing. We constantly work to ensure redundancy in the supply chain to avoid schedule and continuity risks.

### Total Traceability

Work order documentation, operator training, and our ERP system enable us to provide total traceability for the hardware we deliver. Whether it's days or years later, our processes allow us to know how product was fabricated. All products are serialized and can be linked to an operator, a test station, and a date code.

## Antenna Testing

Eravant built two anechoic chambers for our customers' antenna testing requirements. Both antenna ranges can cover frequency ranges from 1 to 170 GHz.

### 2D Far Field Range

Constructing our 26-foot antenna chamber was a priority for our team and our customers to support our extensive antenna product lines. The larger of our ranges is equipped with a 2D turn table, a signal generator, high power frequency extenders, waveguide harmonic mixers, a spectrum analyzer and many standard gain horns to cover the frequency range of 1 GHz to 170 GHz.

### 3D Far Field Range

Our smaller antenna range still impresses with a 3D positioner, a Vector Network Analyzer, broadband power amplifiers, and many dual polarized transmitting antennas. It covers the frequency range of 1 to 67 GHz and can measure 3D patterns. Our decision to implement dual polarized antennas as TX transmitter antennas greatly increases the speed and accuracy of the range.

### Sidelobe & Cross-Polarization Pattern Measurement

Dedicated high power transmitter modules are reserved at the antenna chambers to support extreme low sidelobe and high cross-polarization antenna pattern measurement in the frequency range of 1 to 170 GHz.

## Custom Solutions

### Leverage Our Experience

Starting off right sets the tone for the entire project. Eravant engineers partner collaboratively with customers to provide reliable feedback and solutions at the onset. We help to review feasibility, optimize block diagrams, and point out considerations that improve the likelihood of a successful program.

### Custom at Commercial Speeds

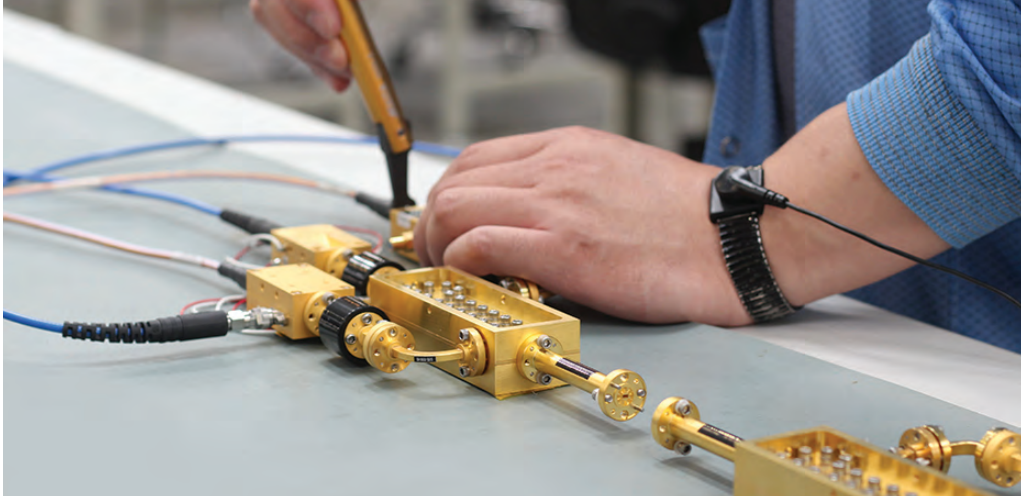
Eravant was founded on the idea that we would invest in designing upfront so that products were already available when customers needed them. Today, we build our custom solutions on a design library of over 5,000 components. Using mature designs as a foundation not only reduces uncertainty, but also ensures we can complete design reviews and start building hardware faster.

Custom subassemblies can deliver in as little as 8 weeks ARO. Some custom components can be turned around in as little as 1-2 days.

### From Proof of Concept to Product

Eravant can be your partner from concept demonstration through final product. Our teams have worked shoulder to shoulder with





design teams through the interactive product development process. We can work with customers to make prototypes more compact, more robust, and more affordable with each revision.

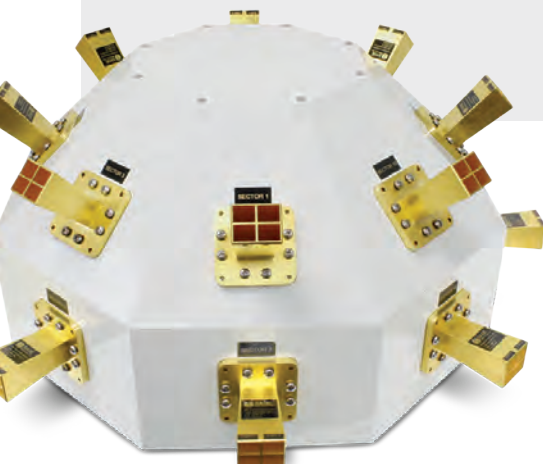
#### **Case Study: Custom Sounder for 5G mmW Channel Characterization**

**Application:** 5G millimeter wave channel characterization, integral to the development of the architecture and design of new wireless networks. The sounder is unique in its ability to quickly capture and process real-time channel parameter measurements.

**Development:** 5 Months

**Features:** TX and RX modules that include sector antennas, amplifiers, and switch networks to support system requirements. To realize the project in such a short amount of time, Eravant relied on their millimeter wave hardware experience and drew heavily from manufacturing knowledge gained through the development of their standard product offering.

**Results:** Eravant successfully delivered the channel sounder capable of making 6,000 measurements per minute. Its real-time signal processing can generate an enormous amount of data. The equipment was used to model the 28 GHz portion of the spectrum.



## **Commercial Space**

Eravant participates in the New Space Economy by supporting the requirements of satellite and ground equipment manufacturers for commercial space. Currently, the best space projects for us are light on programmatic requirements, but uncompromising on performance. Read on to understand our environmental testing capabilities and learn more about our space heritage.

#### **Temperature Testing**

Our MP/Thermal TA-5000A Rapid Temperature test setup is used to test any device in the temperature range of -80 to 225°C. It can also be used for temperature shock testing to meet certain space environmental testing criteria and has a temperature accuracy of 1.0°C.

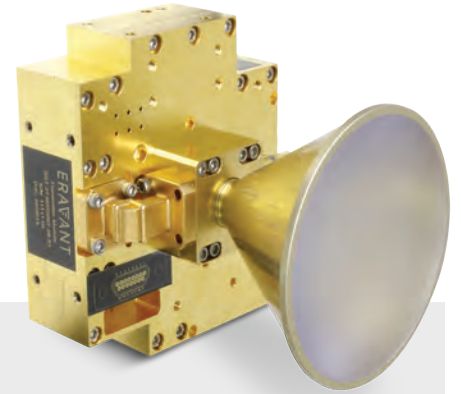
#### **Thermal Vacuum Chamber**

Thermal Vacuum Chamber (TVAC) testing is critical to understanding how hardware will operate in space and can help identify any design issues before components are integrated into larger systems. Eravant designed and built its own Thermal Vacuum Chamber for millimeter wave component and subassembly qualification for space. Our TVAC boasts 7.5 x 10E-6 torr vacuum pressure and 10K/4K to 150°C temperature range.

Many standard Eravant products can be qualified for space and cryogenic applications after passing TVAC testing. This makes Eravant one of the fastest suppliers of TVAC-compliant millimeter wave products in the industry.

#### **Vacuum Thermal Oven**

Many Eravant COTS designs can be readily adapted for space applications with minor adjustments to material selection and adding a bake-out step to our manufacturing process. Our vacuum thermal oven prevents outgassing and removes volatile compounds from our products for safe use in a space environment.



#### **Space Heritage - Ka-Band Transceiver & Antenna Assembly**

**Application:** Small Maritime Surveillance CubeSat

**Development:** 5 Months

**Features:** The module converts a 0.9 to 1.1 GHz IF input signal to deliver linear transmission of +29 dBm at 26.7 to 26.9 GHz frequency range with a built-in phase locked oscillator, integrated transmitter, polarizer, and lens corrected antenna.

**Results:** Eravant successfully delivered seven space flight qualified Ka-Band integrated transmitter assemblies (ITAs) within five months. The project culminated with a published IEEE paper entitled "Low cost Ka-band transmitter for CubeSat systems" presented at IEEE Radio & Wireless Week. Two satellites were launched into space with additional units to follow.



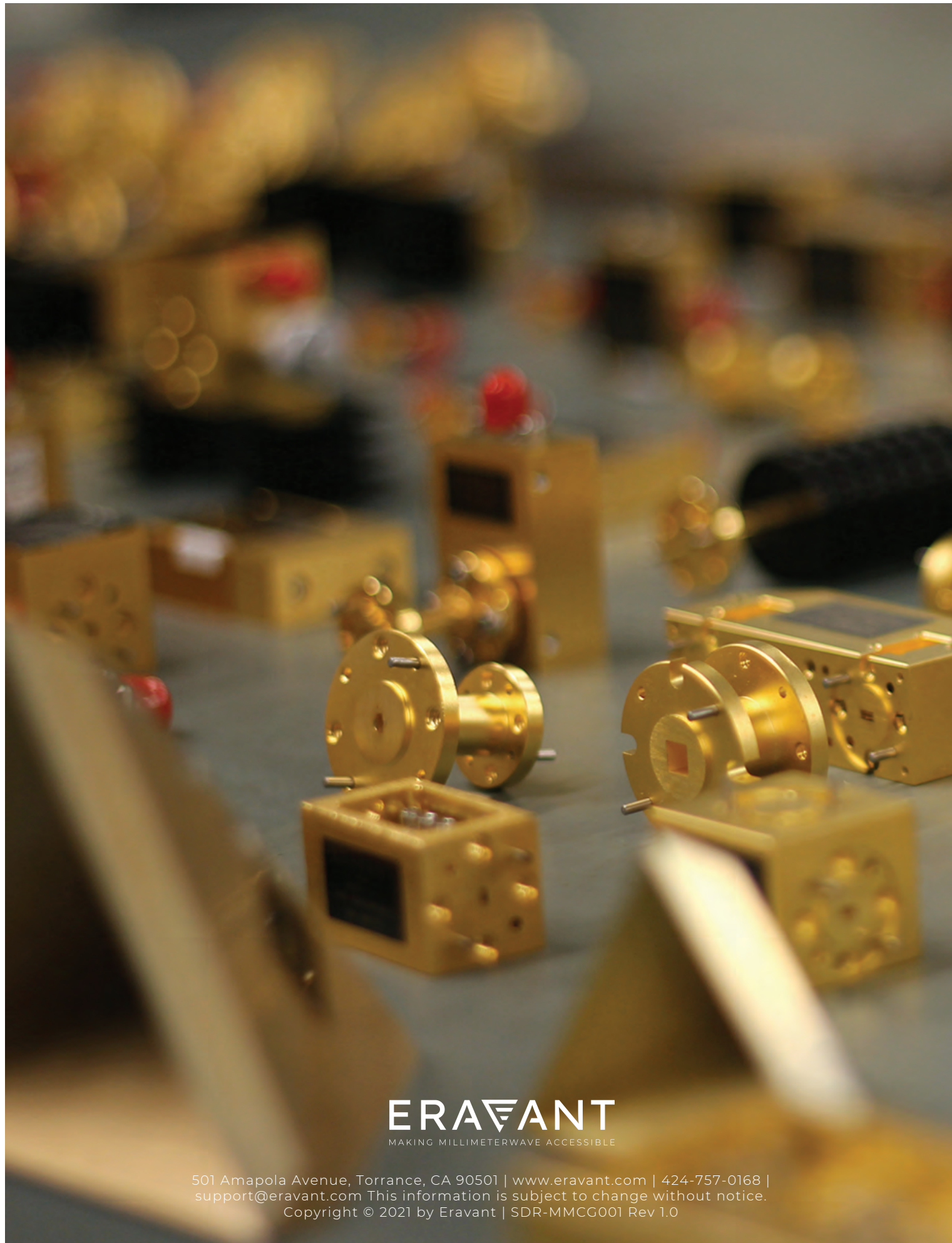
#### **Space Heritage - C-Band & Patch Antennas**

**Application:** 6U CubeSat Deep-Space Mission

**Development:** 3 Months

**Features:** The C-Band and X-Band antennas fulfill the frequency requirement of 7.145 to 7.235 GHz and 8.4 to 8.5 GHz, respectively and feature 8.0 dBi gain with 8.519 dB return loss.

**Results:** Eravant successfully delivered two of each antenna within three months. Both antennas were installed in the satellite system, which was launched into orbit in 2020.



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