

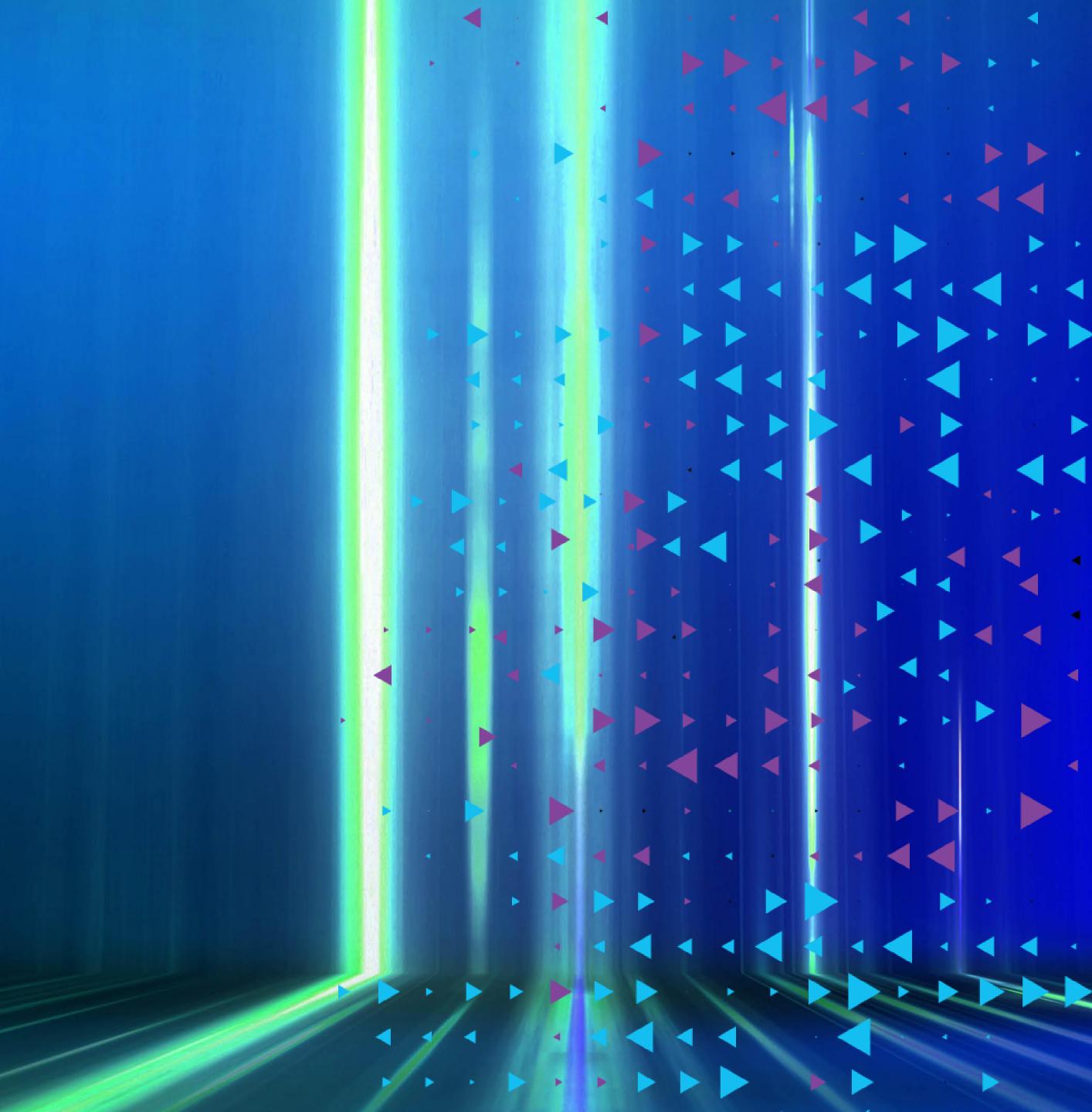
AHEAD OF WHAT'S POSSIBLE™

# **ADD UNCOVERED**



## **Bryan Goldstein** VP, Aerospace and Defense

©2020 Analog Devices, Inc. All rights reserved.



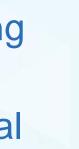
This presentation contains forward-looking statements, which address a variety of subjects including, for example, our statements regarding expected financial results, expected product development and technical advances, anticipated market trends and opportunities, market share gains and expected customer demand and order rates for our products, and ADI's financial goals and long-term financial model. Statements that are not historical facts, including statements about our beliefs, plans and expectations, are forward-looking statements. Such statements are based on our current expectations and are subject to a number of factors and uncertainties, which could cause actual results to differ materially from those described in the forward-looking statements. The following important factors and uncertainties, among others, could cause actual results to differ materially from those described in these forward-looking statements: the uncertainty as to the extent of the duration, scope and impacts of the COVID-19 pandemic, the proposed acquisition of Maxim Integrated Products, Inc., political and economic uncertainty, including any faltering in global economic conditions or the stability of credit and financial markets, erosion of consumer confidence and declines in customer spending, unavailability of raw materials, services, supplies or manufacturing capacity, changes in geographic, product or customer mix; changes in export classifications, import and export regulations or duties and tariffs; changes in our estimates of our expected tax rate based on current tax law; our ability to successfully integrate acquired businesses and technologies; the risk that expected benefits, synergies and growth prospects of acquisitions may not be fully achieved in a timely manner, or at all; adverse results in litigation matters; and the risk that we will be unable to retain and hire key personnel. For additional information about factors that could cause actual results to differ materially from those described in the forward-looking statements, please refer to our filings with the Securities and Exchange Commission ("SEC"), including the risk factors contained in our most recent Quarterly Report on Form 10-Q and Annual Report on Form 10-K. Forward-looking statements represent management's current expectations and are inherently uncertain. Except as required by law, we do not undertake any obligation to update forward-looking statements made by us to reflect subsequent events or circumstances.

















## **ADI** Aerospace and Defense

## **Business Overview**

Market leader in precision & RF with diversity across applications & customers



Broad portfolio of defense & space grade signal chain solutions from antenna to bits



Decades of system-level knowledge & expertise, strengthened by the Hittite acquisition



Developing more advanced integrated capabilities (custom modules & subsystems)



Strong profitable growth with a high-single digit five-year CAGR at above corporate margins

**Avionics** 

Space

## **Revenue Profile**



Record defense budgets targeted at advanced & smarter electronics Capturing larger customer bill of materials by moving to modules & sub-systems Increasing silicon content in advanced defense & commercial applications Low Earth Orbit (LEO) satellite communication mega constellations







## ADI Space: \$150M+ Revenue Across Diverse Customer Base

## **\$2B+ SAM<sup>1</sup> Across Multiple Applications**



**Ground Terminals** 



#### **Communications Satellites**



Launch Systems



Other (e.g., Exploration)

## Space Customers Relying on ADI to Design & Manufacture High Performance, Integrated Solutions

1 ADI estimates for FY 2025.

## **ADI's Edge**



### **Broad Product Portfolio**

Precision analog, RF, power, data conversion, interface



#### **Industry Leader**

45+ years providing space grade components



#### **Profitable Growth**

Diversified growth & technology re-use



## **Advanced Packaging Solutions** Die, ceramic, metal can, plastic, SiP, modules

## **Robust Environmental Screening** Radiation testing, lot acceptance test, life test

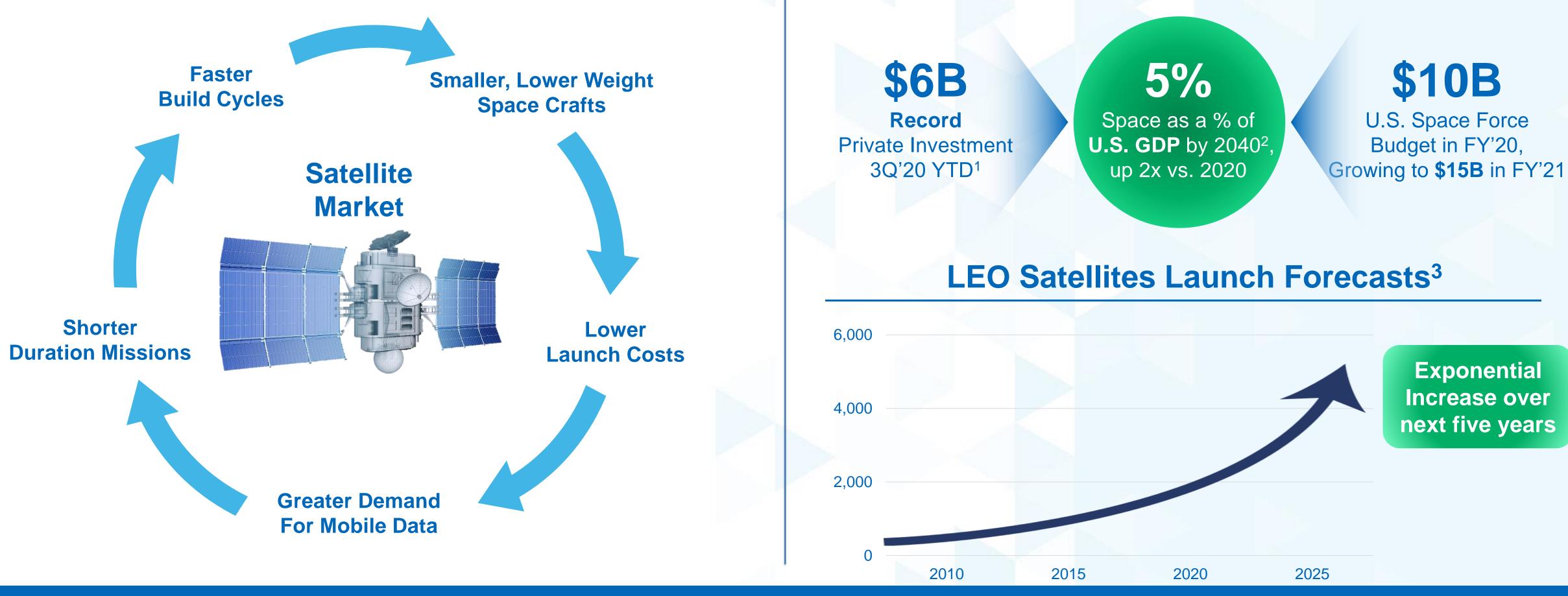




NALOG

## **The New Space Race**

## **Evolving Market Dynamics**



#### Evolving Market Dynamics & Record Levels of Investment From Private & Public Sources

1. Space Capital: Space Investment Quarterly Q3 2020; 2. Chamber of Commerce; 3. Internal ADI estimates, Federal Communications Commission & McKinsey.

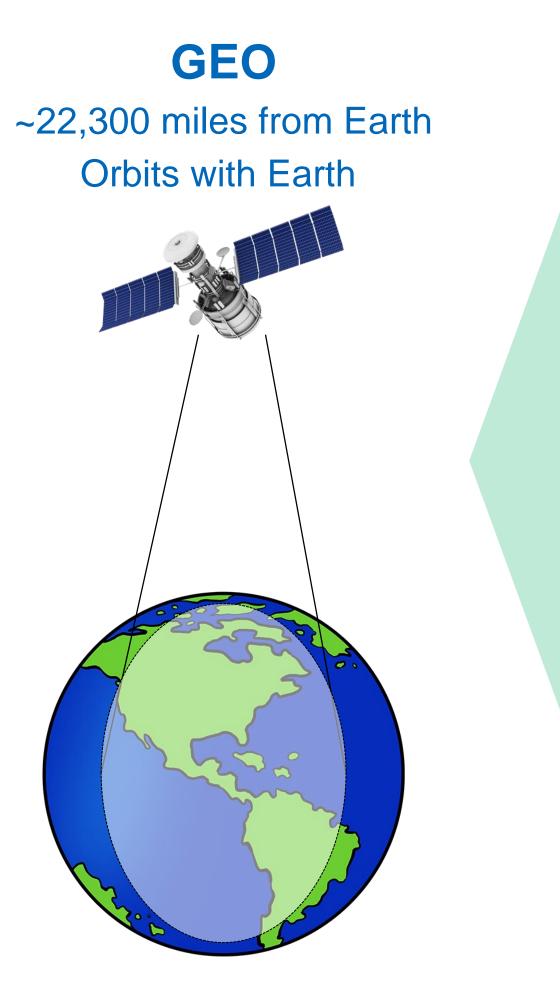
## **Record Investment Levels**







# Key Differences: GEO & LEO Communications Satellites



Geostationary (GEO)	Comms Satellites	Low Earth Orbit (LEO)	~400-1,200 miles from E Orbits around Earth
< 10	Constellation Size	1000s	
20+ Years	Useful Life	3-7 Years	
10	Annual Launches	3K to 4K	
\$ Millions	SAM per Satellite	~\$100K	

## **4X** SAM Opportunity in LEO vs. GEO by FY'25

## LEO









**ANALOG DEVICES** 

# Significant ADI Content Opportunity in LEO Communications

# **ADI's LEO Opportunity**



## **Market Leadership**

High performance precision & RF



## **New Content**

New RF, beam forming IC & power opportunities



## **Complete Solutions**

Acquisition leverage with the integrated transmit & receive chains (Hittite) & power (LTC)



## More Volume & Faster Upgrades

Mega LEO constellations & shorter time to market

#### **Electrical Power Systems**

- Distribution & Charging
- Battery Management
- ► Isolation



- High Speed Converters (ADC/DAC)
- ► High Performance RF

#### **Communication Payloads**

- ► Beam Forming IC
- High Power Amplifiers
- Integrated RF subsystems

#### **Stabilization & Pointing**

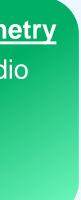
- MEMS Accelerometers & Gyroscopes
- Inertial Measurement Units

#### **System Health & Telemetry**

- Software Defined Radio Transceivers
- Precision Converters
- Voltage Reference











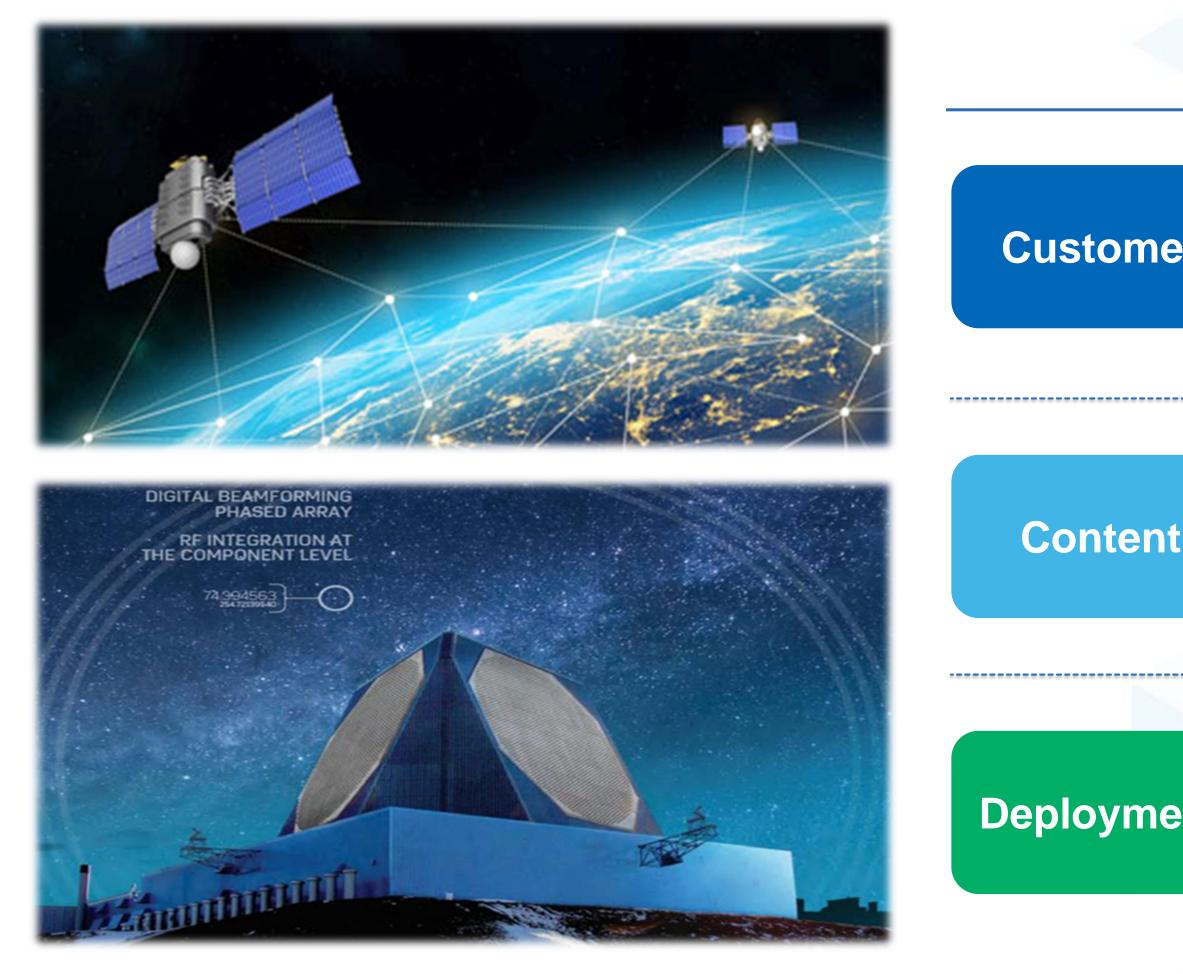






AHEAD OF WHAT'S POSSIBLE™

# Space Leadership Positions ADI for Long-term Profitable Growth



### Rise of Satellite Communications Has the Potential to Enable New Business Models

## **Key Takeaways**

er	<ul> <li>Trusted partner &amp; industry leader in precision &amp; RF</li> <li>Diverse across traditional companies &amp; emerging disruptors</li> <li>Customers require larger volumes in faster design cycles</li> </ul>
	<ul> <li>LEO communication satellites add 4x to market opportunity</li> <li>Leveraging existing technology from other applications</li> <li>Advancing integration, capturing larger share with sub-systems</li> </ul>
ent	<ul> <li>LEO launch cadence set to accelerate over next five years</li> <li>Extending commercial grade space portfolio</li> <li>Unlock new markets (telemedicine, autonomous vehicles)</li> </ul>







Bryan Goldstein is the Vice-President of the Aerospace and Defense business unit of Analog Devices, where he is responsible for Profit and Loss, Customer Relations, and Strategic Investments for the business as well as product and advanced technology development for ADI's microwave MMIC, MEMS inertial, modules, subsystems, and high reliability product domains. He has more than 30 years of experience in the Aerospace and Defense industry, with specific expertise in the design and manufacture of microwave modules and subsystems. Most recently, Mr. Goldstein served as Vice President of the Modules, Subsystems, and Space business unit of Hittite Microwave Corporation—prior to its acquisition by Analog Devices.

Before joining Hittite, Mr. Goldstein worked at Arcom Wireless; Sanders, a Lockheed Martin Company; and the Raytheon Missile Systems Division where he held positions in General Management, Program Management, Operations Management and Modules/Subsystems Design. Mr. Goldstein holds a B.S. in electrical engineering from Northeastern University and an M.S. in electrical engineering from the University of Massachusetts.





