A Microwave and Millimeter Wave World
The Future Is High Frequency

GREG HENDERSON
SVP, AUTOMOTIVE, COMMUNICATIONS, AND AEROSPACE AND DEFENSE

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#1 in High Performance RF, Microwave, and Millimeter Wave Market

- Industry’s Broadest Portfolio from DC to 100 GHz
- Complete Signal Chain Solutions
- Multimarket Diversified Growth
- 1000s of Customers

$500M+ 2016 Revenue
Data, Sensing, and Automation Driving $4 Billion SAM by 2022

- Communications Infrastructure
- Aerospace, Defense, and Security
- Automotive
- Industrial
- Test and Measurement
Microwave and Millimeter Wave Applications—The Future Is High Frequency

Microwave and Millimeter Wave Growing at 4× Traditional RF

- Microwave and Millimeter Wave Waveband
- 10 kHz, Radio Frequency
- 6 GHz, Microwave
- 30 GHz, Millimeter Wave
- 110 GHz, Millimeter Wave

- Applications:
  - CATV and Cable Modem
  - RF ID, Toll Tags
  - Telematics, GPS
  - Satellite Radio
  - Test Equipment
  - Industrial Imaging
  - Satellite Payload Comms/Telemetry
  - 24G Advanced Driver Assistance Systems
  - V-Band Point-to-Point Links
  - Cellular 5G
  - Military Radar and Countermeasures
  - E-Band Point-to-Point Links
  - WiGig
  - 77G Advanced Driver Assistance Systems
  - Scientific Imaging and Measurement

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Microwave and Millimeter Wave Applications Drive the Future

- Complexity
- Resolution
- Data Rate

RF Wave
- 10 kHz
- Radio Frequency
- 6 GHz
- Microwave
- 30 GHz
- Millimeter Wave
- 110 GHz

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ADI Strategic Initiatives are Enabling Market Transformation

Initiatives

- Enabling Multi-Gbps Communications
- Democratizing Phased Array Solutions
- Making Wireless Sensing Ubiquitous

Leverage Across Markets

Strategically enabling a smarter and more autonomous world
New Technologies Required for 5G: Enabling Multi-Gigabits

>10× Data Increase from 4G to 5G

- Higher Frequency (for bandwidth)
- More Antennas (Massive MIMO)
ADI Software-Defined Radios: Transforming Infrastructure/5G

- Reduction in Base Station Footprint: 50%
- Time-to-Market Advantage: 6 Months+
- Industry-Leading Power Consumption
- Common Software-Defined Platform
- Designed in Tier-1 Ecosystem for Macro, Small Cell, Massive MIMO

1/10th the Size
Phased Array: Future of Wireless Communications and Sensing

Traditional Architecture

- Mechanical Scan
- Single Beam
- 1 Channel/Systems

Phased Array

- Fully Electronic
- Multibeam Capable
- >1000 Channel/System
- Radio Density
Democratizing Phased Array to Drive Market Growth

Current Markets—Aerospace and Defense

- Highly Integrated Multichannel ICs
- Planar Antenna Technology

ADI Solution

Reduces System Complexity

Moving to Emerging Markets

- Automotive
- Imaging and Scanning
- 5G Cellular
- Satellite Communications

ADEF

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Making Wireless Sensing Ubiquitous

RF Technology

Defense and Security
- Perimeter Security
- Proximity Sensors

Industrial
- UAV Collision Avoidance
- Smart City

Automotive
- Advanced Driver Assistance
- Vital Signs Monitoring

Factory Automation
- Industrial Robots
- Tank Level Sensors
Turnkey Radar Solutions Enabling Industrial Applications

Plug and Play Industrial Radar Evaluation Platform

- **Software**
  - Detection and tracking algorithms included

- **Integration**
  - Full reference design
  - Integrated multichannel antennas

- **Full signal chain solution**
  - Antenna-to-bits radar using all ADI components
ADI Strategy: Layered Elements of Sustainable Differentiation

- Going Beyond Silicon
- System Level Solutions and Integration
- Brodest High Frequency and Wideband Portfolio
- Full Signal Chains with 10,000+ ADI Components

ADI Strengths

- Capturing Market Share
- Creating Competitive Barriers
- Enabling New Applications
ADI Strategic Initiatives Driving Above Market RF and Microwave Growth

Drivers

- Enabling Multi-Gbps Communications
- Democratizing Phased Array Architecture
- Making Wireless Sensing Ubiquitous

Impact

- $4B Market Opportunity by 2022
- mmW Growth 4× RF Market
- Double Digit Revenue Growth
- Multimarket Diversity
Analog Devices 2017 Investor Day

POWERFULLY CONNECTING THE PHYSICAL AND DIGITAL WORLDS