

# Wireless Communications: The Future

Stanford Seminar - The Future of Wireless Communications Hint: It's not a linear amplifier - Stanford Seminar - The Future of Wireless Communications Hint: It's not a linear amplifier 1 hour, 39 minutes - Speaker: Douglas Kirkpatrick, Eridan Communications **Wireless communications**, are ubiquitous in the 21 st century--we use them ...

Introduction

Outline

Eridan \"MIRACLE\" Module

MIRACLE has a unique combination of properties.

Bandwidth Efficiency

Spectrum Efficiency

Software Radio - The Promise

Conventional wideband systems are not efficient.

MIRACLE: Combining Two Enablers

To Decade Bandwidth, and Beyond

Linear Amplifier Physics

Physics of Linear Amplifier Efficiency

Envelope Tracking

Switching: A Sampling Process

Switch-Mode Mixer Modulator

SM Functional Flow Block Diagram

Switch Resistance Consistency

Getting to \"Zero\" Output Magnitude

Operating Modes: L-mode, C-mode, and P-mode

\\"Drain Lag\\" Measurement

Fast Power Slewing: Solved

Fast-Agility: No Reconfiguration

SM Output Immune to Load Pull

Reduced Output Wideband Noise

Key Feature: Very Low OOB Noise

SM Inherent Stabilities

Dynamic Spectrum Access enables efficient spectrum usage.

Massive MIMO

Quick Review on m-MIMO

Maximizing Data Rate

Max Data Rate: Opportunity and Alternatives

Path Forward

24 bps/Hz in Sight?

Ever Wonder How?

Questions?

3rd Control Point

Telecom’s Next Big Shift: AI, 6G and Network Reality with Emmy Johnson - Telecom’s Next Big Shift: AI, 6G and Network Reality with Emmy Johnson 20 minutes - Dori Erann sits down with Emmy Johnson, Founder and Principal Analyst at Skylight Research, to explore what is really ...

Introduction to Ceragon Connects

The telecom industry’s biggest disconnect: monetisation vs innovation

How operators are balancing rising costs and infrastructure investment

Why AI is dominating telecom conversations in 2025

AI, energy efficiency, traffic management, and network security

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| What “network optimisation” really means                                                                                                                                                                                                                                                                                                        |
| Nokia’s exit from fixed wireless access and what it signals for the market                                                                                                                                                                                                                                                                      |
| The biggest bottlenecks facing wireless networks today                                                                                                                                                                                                                                                                                          |
| What defines a truly future-ready network                                                                                                                                                                                                                                                                                                       |
| 6G, quantum computing, and the next era of connectivity                                                                                                                                                                                                                                                                                         |
| Ep 47. Everyone Talks About Integrated Sensing and Communications [Wireless Future Podcast] - Ep 47. Everyone Talks About Integrated Sensing and Communications [Wireless Future Podcast] 1 hour, 4 minutes - Almost every 6G-related keynote speech at scientific conferences focuses on ISAC: Integrated sensing and <b>communications</b> ,. |
| Ep 50. The New Wave of Satellite Communications [Wireless Future Podcast] - Ep 50. The New Wave of Satellite Communications [Wireless Future Podcast] 1 hour, 4 minutes - In episode fifty, Erik G. Larsson and Emil Björnson leave Earth to take a closer look at the new advancements in satellite ...                                        |
| □6G Wireless Communication   6G Communication Technology   Prof. Rahul Pandya (IIT Dharwad) - □6G Wireless Communication   6G Communication Technology   Prof. Rahul Pandya (IIT Dharwad) 1 hour, 7 minutes - reserch #ResearchRushi #6G #6GWirelessCommunication #iitdharwad □6G <b>Wireless Communication</b> ,   6G Communication ...        |
| Why Wireless Doesn't Need More Bandwidth - Why Wireless Doesn't Need More Bandwidth 1 minute - The word \"bandwidth\" has become synonymous with \"data speed\" since these are proportional when using cables. In this video ...                                                                                                               |
| Intro                                                                                                                                                                                                                                                                                                                                           |
| Efficiency                                                                                                                                                                                                                                                                                                                                      |
| Limiting Factor                                                                                                                                                                                                                                                                                                                                 |
| Speed                                                                                                                                                                                                                                                                                                                                           |
| Trends and Future of Wireless Communications - Trends and Future of Wireless Communications 1 hour, 2 minutes - Dr. Qi Bi, President, China Telecom Technology Innovation Center.                                                                                                                                                               |
| Introduction                                                                                                                                                                                                                                                                                                                                    |
| Connectivity                                                                                                                                                                                                                                                                                                                                    |
| Telephony                                                                                                                                                                                                                                                                                                                                       |
| Frequency Band                                                                                                                                                                                                                                                                                                                                  |
| Smart People                                                                                                                                                                                                                                                                                                                                    |
| Smart Scientists                                                                                                                                                                                                                                                                                                                                |
| Bell Labs                                                                                                                                                                                                                                                                                                                                       |
| Frequency Reuse                                                                                                                                                                                                                                                                                                                                 |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internet of Things                                                                                                                                                        |                                                                                                                                                                 |
| Mobile Broadband                                                                                                                                                          |                                                                                                                                                                 |
| Digital Twin                                                                                                                                                              |                                                                                                                                                                 |
| Digital Mirror                                                                                                                                                            |                                                                                                                                                                 |
| Augmented Reality AR                                                                                                                                                      |                                                                                                                                                                 |
| Autonomous Driving                                                                                                                                                        |                                                                                                                                                                 |
| Chipsets                                                                                                                                                                  |                                                                                                                                                                 |
| Challenges                                                                                                                                                                |                                                                                                                                                                 |
| Smart wearables                                                                                                                                                           |                                                                                                                                                                 |
| Augmented reality                                                                                                                                                         |                                                                                                                                                                 |
| Conclusion                                                                                                                                                                |                                                                                                                                                                 |
| Audience Questions                                                                                                                                                        |                                                                                                                                                                 |
| Health Concerns                                                                                                                                                           |                                                                                                                                                                 |
| Reliability and Latency                                                                                                                                                   |                                                                                                                                                                 |
| 6G Technology Explained in 3 Minutes - 6G vs 5G □ - 6G Technology Explained in 3 Minutes - 6G vs 5G □ 3 minutes, 5 seconds                                                | - The sixth-generation <b>wireless communication</b> , is on its way, promising revolutionary speed, ultra-low latency, and groundbreaking ...                  |
| Signal-to-Noise Ratio in Wireless Communications [Video 1] - Signal-to-Noise Ratio in Wireless Communications [Video 1] 9 minutes, 37 seconds                             | - In this video, Associate professor Emil Björnson explains the signal-to-noise ratio (SNR), transmit power, channel gain, and noise ...                        |
| 6G: What, why, and how? - 6G: What, why, and how? 18 minutes                                                                                                              | - Professor Emil Björnson (KTH Royal Institute of Technology) overviews the 6G technology development. He begins by explaining ...                              |
| Wireless communications designed by artificial intelligence - Wireless communications designed by artificial intelligence 1 minute, 17 seconds                            | - The Information and Signal Processing Research Unit for Intelligent <b>Communications</b> , (ISPIC), of the <b>Telecommunications</b> , ...                   |
| \\"The Future of Wireless and What It Will Enable\\" with Andrea Goldsmith - \\"The Future of Wireless and What It Will Enable\\" with Andrea Goldsmith 1 hour, 2 minutes | - Title: The <b>Future</b> , of <b>Wireless</b> , and What It Will Enable Speakers: Andrea Goldsmith Date: 4/3/19 Abstract <b>Wireless</b> , technology has ... |
| Fundamentals of Wireless Channels - Fundamentals of Wireless Channels 15 minutes                                                                                          | - In this video, Professor Emil Björnson explains the basic principles of <b>wireless communication</b> , channels, such as the impact of ...                   |
| The Future of Wireless Communication - The Future of Wireless Communication 59 minutes                                                                                    | - In this talk, the speaker will explore the rapidly evolving landscape of <b>wireless communication</b> ,, a fundamental pillar of modern ...                  |

Webinar: Bringing AI research to wireless communications and sensing - Webinar: Bringing AI research to wireless communications and sensing 1 hour, 7 minutes - AI for **wireless**, is already here, with applications in areas such as mobility management, sensing and localization, smart signaling ...

Introduction to Integrated Sensing and Communication (ISAC) - Introduction to Integrated Sensing and Communication (ISAC) 28 minutes - This video is a recorded lecture on Integrated Sensing and **Communication**, (ISAC), exploring how modern **wireless**, ...

Introduction to Wireless Technology and ISAC

Basic Example: Signal Propagation for Communication and Sensing

Overview of Current Sensing and Communication Technologies

Radar Fundamentals: Delay, Doppler Shift, and Angle Estimation

Comparing Propagation and Path Loss in Communication vs. Sensing

Key Differences: One-Way vs. Two-Way Links and Their Implications

Integration Levels for ISAC in 6G: Site, Hardware, and Signal Sharing

Potential Use Cases: Network Optimization and External Applications

Example: Range Estimation and Resolution

Example: Velocity Estimation, Doppler Shift, and Resolution Limits

Example: Angle Estimation and Signal Design for Sensing

Waveform Choices: From Continuous Wave to OFDM for 6G

Summary and Outlook for 6G ISAC

Beyond Connectivity: The AI-Powered Future of Telecom - Beyond Connectivity: The AI-Powered Future of Telecom 1 minute, 44 seconds - Telecom companies are evolving from connectivity backbones into AI-powered grids that transform **wireless**, signals into ...

Prof. Harald Haas - Shedding Light on Future Wireless Communications - Prof. Harald Haas - Shedding Light on Future Wireless Communications 53 minutes - Professor Harald Haas, Chair of **Mobile Communications**,, presents his inaugural lecture entitled Shedding Light on **Future**, ...

Intro

Thank you

Mobile Communications

Radio Frequency Spectrum

Network Capacity

|                                |  |
|--------------------------------|--|
| Questions                      |  |
| Wireless Communications        |  |
| Interference                   |  |
| What is better                 |  |
| Frequency reuse                |  |
| Selforganizing techniques      |  |
| Buffer thresholds              |  |
| Policy of politeness           |  |
| Results                        |  |
| Multiple Input Multiple Output |  |
| Smart Signal Processing        |  |
| How it works                   |  |
| The key question               |  |
| Spectral efficiency gain       |  |
| Drivers                        |  |
| The Internet of Things         |  |
| Smarter Technique              |  |
| WiFi Router                    |  |
| Applications                   |  |
| Wireless Access Points         |  |
| Search filters                 |  |
| Keyboard shortcuts             |  |
| Playback                       |  |
| General                        |  |

Subtitles and closed captions

Spherical Videos