Welcome to 2017 Analyst Day

September 21, 2017
Safe Harbor for Forward-Looking Statements

This presentation contains forward-looking statements regarding our financial prospects, including financial guidance for 3Q-2017, markets, demand for our products, and product development, among other things. Such forward-looking statements are based on current expectations, estimates and projections about the Company’s industry and management’s beliefs and assumptions. These statements are subject to risks and uncertainties which are more fully described in the documents that we file with the SEC, including our 10-Ks, 10-Qs and 8-Ks, and these statements may differ materially from our actual results.

This presentation contains non-GAAP financial measures such as non-GAAP operating Income, margin and EPS, and Adjusted EBITDA and EBITDA margins. We believe the presentation of these non-GAAP measures provide management and investors with meaningful information to understand and analyze our financial performance. Reconciliations of these non-GAAP measures to their most directly comparable GAAP measures can be found in the Appendix to the presentation. However, this presentation should not be considered in isolation or as a substitute for the comparable GAAP measurements, when available.
Emerging Solutions

Laura Stark
General Manager,
Emerging Solutions Division

Rambus
Data • Faster • Safer
Emerging Solutions
Innovating future solutions

Data Center

Mobile Edge

Emerging Solutions
Innovating future solutions
Worldwide Patent Portfolio in Strategic Areas

1500+ patents & apps related to:
• DRAM, NAND Flash, and RRAM memory system architectures and circuits
• Memory interfaces including DDR2/DDR3/DDR4

500+ patents & apps related to:
• Serial link architectures and circuits
• SerDes Interfaces including PCIe, 10GbE, SATA, USB, etc.

130+ patents & apps related to:
• DPA/side-channel attack countermeasures
• Anti-counterfeiting and anti-piracy technology
• Key protection and secure software loading for SoCs and FPGAs
Relevance with Industry Leaders

Source: Innography (Aug-2017)
Challenges Facing the Industry…

Limits of DRAM scaling

- Cost per bit of DRAM no longer scaling with process

Big Data Analytics

- Massive and growing data sets are straining data center architecture

Low CPU Utilization

- Number of CPU cores scaling faster than memory can support

These challenges are opportunities for the types of innovation that Rambus excels at
New Memory Architectures for Future Data Center

• Exploring alternatives to accelerate the delivery and computation of data

• Utilizing our acceleration platform to develop new advanced memory systems

• Integrating DRAM and Storage Class Memory
Driving the Next Big Changes in Memory

High-speed Interfaces
- DIMM Extension
- GenZ
- OpenCAPI

Module Buffer Architectures
- RDIMM
- LRDIMM
- NVDIMM
- Hybrid DIMM

Memory Architectures
- DRAM
- Flash
- RRAM
- MRAM
- PCM
Exploring avenues to surpass the slowing of Moore’s Law and meet the needs of next-generation data centers through cryogenic research.
Reestablishing DRAM Scaling - Cryogenic Technology

Exploring avenues to overcome the slowing of Moore’s Law for future-generation data centers

- Focused on cryogenic temperature to enable new memory solutions
  - Lower operating temperature allows lower operating voltages with improved energy efficiency and cost of ownership (COO) for memory systems
  - Optimized architectures are required to reap these benefits for cryogenic and quantum computers

![Diagram showing cryogenic temperature benefits](image)
Expanding to Prototypes

- Cryogenic Research Partner
- FAB Partner
- DRAM Partner
- Modeling
- Development