Safe Harbor for Forward-Looking Statements; Other Disclosures

This presentation contains forward-looking statements under the Private Securities Litigation Reform Act of 1995 including Rambus’ financial guidance for future periods, product and investment strategies, timing of expected product launches, demand for existing and newly-acquired technologies, the growth opportunities of the various markets we serve, the expected benefits of our merger, acquisition and divestiture activity, including the success of our integration efforts, and the effects of ASC 606 on reported revenue, amongst other things.

Such forward-looking statements are based on current expectations, estimates and projections, management’s beliefs and certain assumptions made by Rambus’ management. Actual results may differ materially. Our business is subject to a number of risks which are described more fully in our periodic reports filed with the Securities and Exchange Commission, as well risks and the potential adverse impacts related to, or arising from, the Novel Coronavirus (COVID-19). Rambus undertakes no obligation to update forward-looking statements to reflect events or circumstances after the date hereof.

Effective January 1, 2018, the Company adopted Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers in ASC 606. The adoption of ASC 606 materially impacted the timing of revenue recognition for the Company's fixed-fee intellectual property licensing arrangements. The adoption of ASC 606 did not have a material impact on the Company’s other revenue streams, net cash provided by operating activities, or its underlying financial position.

This presentation contains non-GAAP financial measures, including operating costs and expenses, interest and other income (expense), net and diluted net income (loss) per share. In computing these non-GAAP financial measures, stock-based compensation expenses, acquisition-related transaction costs and retention bonus expense, amortization expenses, depreciation expense on unused Electronic Design Automation (“EDA”) software licenses, expense on abandoned operating leases, non-cash interest expense and certain other one-time adjustments were considered. The non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures calculated in accordance with GAAP, and the financial results calculated in accordance with GAAP and reconciliations from these results should be carefully evaluated. Management believes the non-GAAP financial measures are appropriate for both its own assessment of, and to show investors, how the Company’s performance compares to other periods. Reconciliation from GAAP to non-GAAP results are made available and more fully described on our website as well as the back of this deck and in the earnings release.
Rambus at a Glance

Who We Are

• Pioneer of industry-leading chips and silicon IP making data faster and safer
• Solve bottleneck between memory and processing for data-intensive systems
• Improve data bandwidth, capacity and security from cloud to consumer

Rambus Offerings

Chips
Silicon IP
Architecture Licenses

Memory Interface Chips
High-speed Interface and Security IP
High-speed IO & DPA Countermeasures

Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Q420</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensing Billings</td>
<td>$64.2M</td>
<td>$255.1M</td>
</tr>
<tr>
<td>Contract &amp; Other Revenue</td>
<td>$12.4M</td>
<td>$47.7M</td>
</tr>
<tr>
<td>Product Revenue</td>
<td>$21.8M</td>
<td>$114.0M</td>
</tr>
<tr>
<td>Cash from Operations</td>
<td>$42.1M</td>
<td>$185.5M</td>
</tr>
</tbody>
</table>

NASDAQ: RMBS

30+ Years Tech leadership & innovation

3000+ Patents and Applications

HQ: California WW Offices in India, EU, Asia

~600 Employees Worldwide

Data • Faster • Safer
Semiconductor Industry Ecosystem Built on Leading-Edge IP

Markets
- Data Center
- 5G/Edge
- IoT
- Automotive
- Government

Cloud Providers
- Google
- Amazon
- Facebook
- Microsoft
- Alibaba Group

System OEMs
- HP
- Dell
- Quanta Computer
- Bosch
- Ericsson

Chip Makers
- Micron
- Samsung
- SK Hynix
- AMD
- Qualcomm
- Intel

Foundry
- TSMC
- Samsung
- GlobalFoundries

Technology Suppliers
- Renesas
- Montage Technology
- Inphi
- Rambus
- Cadence
- Synopsys
- ARM

Ecosystem Example
Data-Intensive Markets Driving Growth

Global Data Infrastructure Trends

- Exponential rise in data and infrastructure requirements
- Shift from enterprise to cloud continues
- AI/ML use cases broadening, driving up performance requirements
- Complexity and value of data increasing need for security

Data throughput, capacity & security critical across markets
Fast and Secure Connections for Data Center and Cloud

- Accelerate data for AI
- Improve memory subsystem speed and capacity
- Enhance hardware security

- Fastest Data Rates
- Maximum Capacity
- Best Design Margin
- Highest Security
- Easy Integration

Data • Faster • Safer
Innovations Focused on Market Needs

Growing Patent Portfolio

- Fundamental R&D feeds product development
- Relevant portfolio regularly cited by major industry players
- Supports predictable licensing base and sustained cash generation

Industry Recognition of Rambus Patents

Source: Innography, patent citations
Chip Growth Outpacing Market

Continued momentum in Silicon IP

- **Product (~Chips)**
  - FY20 revenue: $114.0M, up 56% over 2019

- **Contract & Other (~Silicon IP)**
  - FY20 revenue: $47.8M, up 14% over 2019

**Bar Chart**

- TTM Dec 19:
  - Product (Chips): 100% of revenue
  - Contract & Other (Silicon IP): 20% of revenue
  - Other (RLD, Payments & Ticketing): 20% of revenue

- TTM Dec 20:
  - Product (Chips): 120% of revenue
  - Contract & Other (Silicon IP): 30% of revenue
  - Other (RLD, Payments & Ticketing): 30% of revenue

Data • Faster • Safer
### Continued Strong Cash Generation

<table>
<thead>
<tr>
<th></th>
<th>ASC 606</th>
<th>ASC 606</th>
<th>ASC 606</th>
<th>ASC 606</th>
<th>ASC 606</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q4 2019</td>
<td>Q1 2020</td>
<td>Q2 2020</td>
<td>Q3 2020</td>
<td>Q4 2020</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$59.9</td>
<td>$64.0</td>
<td>$59.9</td>
<td>$56.9</td>
<td>$61.9</td>
</tr>
<tr>
<td><strong>Total Operating Costs and Expenses</strong>¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$62.3</td>
<td>$63.5</td>
<td>$59.5</td>
<td>$56.7</td>
<td>$55.8</td>
</tr>
<tr>
<td>**Operating Income (Loss)**¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>($2.3)</td>
<td>$0.5</td>
<td>$0.4</td>
<td>$0.2</td>
<td>$6.1</td>
</tr>
<tr>
<td><strong>Cash from Operations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$35.4</td>
<td>$37.3</td>
<td>$62.0</td>
<td>$44.1</td>
<td>$42.1</td>
</tr>
</tbody>
</table>

Product growth and key licensing agreements driving revenue

Disciplined expense management through refocus on core growth initiatives

Operating results under ASC 606 do not reflect significant cash flows from fixed-fee licensing arrangements signed prior to the standard becoming effective

Sustained strong cash generation

¹Please refer to reconciliations of non-GAAP financial measures included in this presentation and in our earnings release
### Solid Balance Sheet Supports Strategic Initiatives

<table>
<thead>
<tr>
<th>In Millions</th>
<th>Q4 2019</th>
<th>Q1 2020</th>
<th>Q2 2020</th>
<th>Q3 2020</th>
<th>Q4 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Cash &amp; Marketable Securities</strong></td>
<td>$407.7</td>
<td>$435.4</td>
<td>$486.1</td>
<td>$520.2</td>
<td>$502.6</td>
</tr>
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<td></td>
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</tr>
<tr>
<td>Driven by strong cash from operations partly offset by $50M accelerated share repurchase in Q4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>$1,339.0</td>
<td>$1,319.5</td>
<td>$1,316.6</td>
<td>$1,309.0</td>
<td>$1,243.9</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>Strong balance sheet with limited debt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stockholders’ Equity</strong></td>
<td>$970.9</td>
<td>$965.7</td>
<td>$965.2</td>
<td>$958.2</td>
<td>$905.1</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>$368M and $402M contract assets in Q4 2020 and Q3 2020 respectively, related to ASC 606 adoption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cash from Operations</strong></td>
<td>$35.4</td>
<td>$37.3</td>
<td>$62.0</td>
<td>$44.1</td>
<td>$42.1</td>
</tr>
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<td></td>
</tr>
<tr>
<td>Sustained strong cash generation</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Strong Cash From Operations

Low Capital Expenditure, Consistent Return to Shareholders

- Execution of strategy and operational discipline yields excellent cash flow
- Strong cash position enables flexibility for M&A
- Returned $250M of cash to shareholders from 2015 through 2020 through Accelerated Share Repurchase programs
Pioneer of industry-leading chips and silicon IP enabling critical performance improvements for data center and cloud

Continued innovation feeds patent portfolio and product roadmap expansion

Superior technical execution and strong operational discipline drive solid financial results and profitable growth

Strong balance sheet and cash generation fuel strategic initiatives and return of capital to shareholders
Thank you
Reconciliation of Non-GAAP Financial Measures

<table>
<thead>
<tr>
<th>Net Income (Loss) in Millions</th>
<th>Q4 2019 (ASC 606)</th>
<th>Q1 2020 (ASC 606)</th>
<th>Q2 2020 (ASC 606)</th>
<th>Q3 2020 (ASC 606)</th>
<th>Q4 2020 (ASC 606)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP Net Loss</td>
<td>($10)</td>
<td>($8)</td>
<td>($11)</td>
<td>($13)</td>
<td>($12)</td>
</tr>
<tr>
<td>Adjustments:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>$5</td>
<td>$6</td>
<td>$7</td>
<td>$7</td>
<td>$6</td>
</tr>
<tr>
<td>Acquisition-related/divestiture costs</td>
<td>$4</td>
<td>$2</td>
<td>$2</td>
<td>$1</td>
<td>$1</td>
</tr>
<tr>
<td>Amortization</td>
<td>$4</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>Restructuring and other charges</td>
<td>$5</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$3</td>
</tr>
<tr>
<td>Non-cash interest expense</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
</tr>
<tr>
<td>Recovery on assets held for sale</td>
<td>($8)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Facility restoration costs</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Change in fair value of earn-out liability</td>
<td>$0</td>
<td>($2)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Depreciation expense on unused EDA software licenses</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$2</td>
</tr>
<tr>
<td>Expense on abandoned operating leases</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Provision for (benefit from) income taxes</td>
<td>($1)</td>
<td>($1)</td>
<td>($1)</td>
<td>$0</td>
<td>($0)</td>
</tr>
<tr>
<td>Non-GAAP Net Income</td>
<td>$2</td>
<td>$5</td>
<td>$3</td>
<td>$2</td>
<td>$6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating Income (Loss) in Millions</th>
<th>Q4 2019 (ASC 606)</th>
<th>Q1 2020 (ASC 606)</th>
<th>Q2 2020 (ASC 606)</th>
<th>Q3 2020 (ASC 606)</th>
<th>Q4 2020 (ASC 606)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP Operating Loss</td>
<td>($13)</td>
<td>($11)</td>
<td>($12)</td>
<td>($13)</td>
<td>($11)</td>
</tr>
<tr>
<td>Adjustments:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>$5</td>
<td>$6</td>
<td>$7</td>
<td>$7</td>
<td>$6</td>
</tr>
<tr>
<td>Acquisition-related/divestiture costs</td>
<td>$4</td>
<td>$2</td>
<td>$2</td>
<td>$1</td>
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</tr>
<tr>
<td>Amortization</td>
<td>$4</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>Restructuring and other charges</td>
<td>$5</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$3</td>
</tr>
<tr>
<td>Facility restoration costs</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Depreciation expense on unused EDA software licenses</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$2</td>
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<tr>
<td>Expense on abandoned operating leases</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Change in fair value of earn-out liability</td>
<td>$0</td>
<td>($2)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Non-GAAP Operating Income (Loss)</td>
<td>($2)</td>
<td>$1</td>
<td>$0</td>
<td>$0</td>
<td>$6</td>
</tr>
<tr>
<td>Depreciation</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$7</td>
</tr>
<tr>
<td>Adjusted EBITDA</td>
<td>$3</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$13</td>
</tr>
</tbody>
</table>

Certain amounts may be off $1.0M due to rounding.
# Revenue and Licensing Billings

<table>
<thead>
<tr>
<th>In Thousands</th>
<th>ASC 606</th>
<th>ASC 606</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1'19</td>
<td>Q2'19</td>
</tr>
<tr>
<td>Royalty Revenue</td>
<td>$24,853</td>
<td>$27,050</td>
</tr>
<tr>
<td>Product Revenue</td>
<td>$8,964</td>
<td>$16,031</td>
</tr>
<tr>
<td>Contract and Other Revenue</td>
<td>$14,567</td>
<td>$15,216</td>
</tr>
<tr>
<td>Total</td>
<td>$48,384</td>
<td>$58,297</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In Thousands</th>
<th>ASC 606</th>
<th>ASC 606</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1'19</td>
<td>Q2'19</td>
</tr>
<tr>
<td>Royalty Revenue</td>
<td>$24,853</td>
<td>$27,050</td>
</tr>
<tr>
<td>Licensing Billings¹</td>
<td>$75,460</td>
<td>$64,948</td>
</tr>
<tr>
<td>Delta</td>
<td>$50,607</td>
<td>$37,898</td>
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</table>

<table>
<thead>
<tr>
<th>In Thousands</th>
<th>ASC 606</th>
<th>ASC 606</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1'19</td>
<td>Q2'19</td>
</tr>
<tr>
<td>ASC 606 Interest Income²</td>
<td>$5,707</td>
<td>$5,288</td>
</tr>
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</table>

¹ Licensing billings is an operational metric that reflects amounts invoiced to our patent and technology licensing customers during the period, as adjusted for certain differences.

² Interest income associated with the significant financing component of licensing agreements as a result of the adoption of ASC 606.
## GAAP to Non-GAAP Income Statement

<table>
<thead>
<tr>
<th>In $ Millions</th>
<th>GAAP</th>
<th>Non-GAAP</th>
<th>Delta to GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual Q4'20</td>
<td>Actual Q4'20</td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>$61.9</td>
<td>$61.9</td>
<td>$-</td>
</tr>
<tr>
<td>Cost of revenue</td>
<td>13.4</td>
<td>9.1</td>
<td>(4.3)</td>
</tr>
<tr>
<td>Research and development</td>
<td>34.8</td>
<td>29.6</td>
<td>(5.1)</td>
</tr>
<tr>
<td>Sales, general and administrative</td>
<td>21.5</td>
<td>17.1</td>
<td>(4.4)</td>
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<tr>
<td>Restructuring and other charges</td>
<td>3.3</td>
<td>0.0</td>
<td>(3.3)</td>
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<tr>
<td>Total operating cost and expenses</td>
<td>72.9</td>
<td>55.8</td>
<td>(17.1)</td>
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<tr>
<td>Operating income (loss)</td>
<td>(11.0)</td>
<td>6.1</td>
<td>17.1</td>
</tr>
<tr>
<td>Interest and other income (expense), net</td>
<td>0.5</td>
<td>2.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Income (loss) before income taxes</td>
<td>(10.5)</td>
<td>8.4</td>
<td>18.9</td>
</tr>
<tr>
<td>Provision for income taxes</td>
<td>1.5</td>
<td>2.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Net income (loss)</td>
<td>($12.1)</td>
<td>$6.4</td>
<td>$18.5</td>
</tr>
</tbody>
</table>

Certain amounts may be off $0.1M due to rounding.
Semiconductor Solutions Built on Leading-Edge IP

**Architecture License**
- Foundational IP

**Silicon IP**
- Security IP: Secure Cores and Provisioning
- Interface IP: Memory and SerDes PHYs and Controllers

**Chips**
- Memory Interface Chips
Memory Interface Chips
Built for speed, power efficiency and reliability, the DDRn memory interface chips for RDIMM, LRDIMM and NVDIMM server modules deliver top-of-the-line performance and the capacity needed to meet the growing demands on enterprise and data center systems.

Industry-leading Performance
• Fully-compliant with the latest JEDEC standards
• Operational speeds up to 4800 Mbps

Enhanced Margin
• Wide margin I/O design with advanced programmability
• Exceed JEDEC reliability standards for ESD and EOS

Optimized Power
• Advanced power management
• Frequency-based, low-power optimization

Superior Debug and Serviceability
• Integrated tools for bring-up and debug
• Works out-of-the-box with no BIOS changes required
## Memory Interface Chips

### Enabling performance and capacity in server DIMMs

<table>
<thead>
<tr>
<th>Technology</th>
<th>Availability</th>
<th>JEDEC Compliance</th>
<th>Speeds</th>
<th>Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDR5 DB &amp; RCD</td>
<td>Available in Production</td>
<td>• Per JEDEC Direction</td>
<td>• Speeds of 4800 Mbps</td>
<td>• Multiple OEM qualifications</td>
</tr>
<tr>
<td>DDR4 DB &amp; RCD</td>
<td>Available in Production</td>
<td>• JEDEC Compliant</td>
<td>• Speeds up to 3200 Mbps</td>
<td>• Multiple OEM qualifications</td>
</tr>
<tr>
<td>NV DDR4 NVRCD</td>
<td>Available in Production</td>
<td>• JEDEC Compliant</td>
<td>• Speeds up to 3200 Mbps</td>
<td>• Multiple OEM qualifications</td>
</tr>
<tr>
<td>DDR3 DB &amp; RCD</td>
<td>Available in Production</td>
<td>• JEDEC Compliant</td>
<td>• Speeds up to 2133 Mbps</td>
<td>• Multiple OEM qualifications</td>
</tr>
</tbody>
</table>

### Smart tools for easy integration and reduced time to market

- LabStation Platform
- and Buffer BIOS Integration Tool

### Validated solutions with partners

- Samsung
- SK hynix
- Micron
DDR DIMMs Boost Capacity and Bandwidth

DIMM Memory Interface chips reduce the number of loads to enable higher system capacity and performance.

Memory Interface Chips = RCD + DB
Silicon IP
Silicon IP: Memory PHYs and Controllers

With their reduced power consumption and industry-leading data rates, our line-up of enhanced memory interface solutions support a broad range of industry standards with improved margin and flexibility.

**Fully Standards-Compatible**
- Compliant with the latest JEDEC and industry-standard specifications
- Support for multi-modal functionality

**Enhanced Design Flexibility**
- Support for multitude packaging options
- Enhanced margin and yield

**Reduced Power**
- Improved power efficiency
- Lower signaling and stand-by power

**Improved Performance**
- Increased data rates
- Improved bandwidth
- Higher capacity
Memory Interface Solutions

Memory PHY and digital controller solutions

<table>
<thead>
<tr>
<th>Memory Type</th>
<th>Technology</th>
<th>Features</th>
</tr>
</thead>
</table>
| HBM2E       | 7nm        | • 3.6 Gbps  
• 1024-bit  
• 2.5D design architecture |
| GDDR6       | 7nm        | • 12-18 Gbps  
• 2x 16-bit channels |
| DDR4/3      | 12nm & 28nm| • 3200 Mbps  
• x16 to x72-bits  
• 1-4 Ranks  
• DFI 4.0 |

Integrated tools for easy bring-up and characterization

- Easy-to-use PC Interface
- Interface to 3rd party software
- Pre-defined test scripts
- PHY control settings
- External instrument control
- System characteristics and analysis

LabStation Platform

Verification tools

Data • Faster • Safer
Complete HBM2E Interface

Applications
• AI/ML
• Graphics
• Networking

Features
• JEDEC standard compliant
• 7nm process node
• 461 GB/s maximum bandwidth
• Speed bins to 3.6 Gbps with operation to 4.0 Gbps
• Support for stacks of 2, 4, 8 or 12 DRAM

World’s fastest HBM2E Operating at 4.0 Gbps
Complete GDDR6 Interface

Applications:
- AI/ML
- Automotive
- Graphics
- Networking

Features:
- JEDEC standard compliant
- 7nm process node
- 72 GB/s maximum bandwidth
- Speed Bins: 12, 14, 16, 18 Gbps
- Supported DRAM: 8, 12, 16 Gbit
- ASIC Interface: DFI style
- Supports clam shell mode
- All training and calibration modes support

GDDR6 Memory Interface Subsystem
(Controller + PHY)

GDDR6 18 Gbps Transmit Eye
Optimized for power and area, our line-up of SerDes Interface solutions deliver maximum performance and flexibility for today’s most challenging systems.

**Fully Standards-Compatible**
- Compliant with the latest industry-standard specifications
- Support for multi-modal functionality

**Enhanced Design Flexibility**
- Support for multiple packaging options
- Enhanced margin and yield

**Reduced Power**
- Improved power efficiency
- Lower signaling and stand-by power

**Improved Performance**
- Increased data rates
- Improved bandwidth
- Higher capacity
High-Speed SerDes Solutions

SerDes PHY and digital controller solutions

- **PCIe 5**
  - 7nm
  - PCIe 5
  - CXL (PHY)
  - PCIe 4/3/2

- **32G**
  - 12nm & 22nm
  - CEI-28/25/11
  - 40/10GbE
  - JESD204B/C
  - CPRI

- **28G**
  - 12nm
  - CEI-28/25/11
  - 40/10GbE
  - FC28
  - XFI/XAUI

- **16G**
  - 12nm & 28nm
  - PCIe 4/3/2
  - CEI 11/6
  - XFI/XAUI
  - SATA
  - SAS

Integrated tools for easy bring-up and characterization

- Easy-to-use PC Interface
- Interface to 3rd party software
- Pre-defined test scripts
- PHY control settings
- External instrument control
- System characteristics and analysis

LabStation Platform

Verification tools
Complete PCIe 5.0 Interface

Co-validated PCIe 5 PHY and Controller
- Eases SoC integration effort
- Reduces design risk
- Speeds time to market

Features
- Backward compatible to PCIe 4/3/2
- PHY supports Compute Express Link (CXL)
- X1, X2, X4, X8 and X16 lane configuration support
- Supports >36dB of channel insertion loss
- Available in 7nm
From chip-to-cloud, Rambus secure silicon IP helps protect the world’s most valuable resource: data. Securing electronic systems at their hardware foundation, our embedded security solutions span areas including secure co-processors, crypto accelerators, secure protocols, anti-counterfeiting and trusted provisioning.

**Improved Profitability**
- Improved time-to-market and reduced inventory waste
- Dynamic SKU and feature management lowers inventory costs
- Reduce revenue lost to unauthorized access and counterfeits

**Superior Security**
- Provide a robust hardware root-of-trust
- Secure valuable secret keys, identity credentials, intellectual property, and other sensitive data
- Protect against cloning, counterfeiting, and reverse engineering

**Managed Value Chain**
- Actively monitor production status, availability, and inventory levels
- Validate process information through secure logs
- Deploy in distributed, high-volume manufacturing
Silicon IP: Security

Protecting semiconductors and their secrets from design and manufacturing through deployment and end-of-life
Root of Trust

Portfolio of solutions from fully-programmable secure co-processors to highly compact state machines
- Provides hardware-based foundation for security
- Offers wide range of cryptographic functions and anti-tamper protections
800G MACsec Protocol Engine

- Protects data in motion with robust Layer 2 security anchored in hardware
- Operates at full line-rate up to 800 Gbps supporting real-time applications
- Offers easy integration into networking SoCs and ASICs

Multi-channel Protocol Engine Supports 100G to 800G MACsec