Safe Harbor Notice

Except for the historical information contained herein, the matters addressed in this presentation are forward-looking statements that involve certain risks and uncertainties that could cause actual results to differ materially, including but not limited to weather, impact of competitive products and pricing, industry-wide shifts in the supply and demand for semiconductor products, rapid technology change, semiconductor industry cycle, and general economic conditions.

Except as required by law, Andes undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.
- Founded in March 2005 in Hsinchu Science Park, Taiwan, ROC.
- Well-established high technology IPO company
- Over 340 people; 80% are engineers.
- TSMC OIP Award “Partner of the Year” for New IP (2015)
- Founding Premier membership in the RISC-V International Association (RISC-V Foundation) (2020)
- AI Global Media Award “Most Outstanding Embedded Processor IP Supplier” (2020)
- Hsinchu Science Park Innovation Award - AndesCore™ NX27V (2020)
- EE Awards - “Taiwan-Product Award” & ”Asia-Company Award” (2021)

**Andes Highlights**

**Andes Mission**

- Innovate performance-efficient processor solution for low-power SoC

**Emerging Opportunities**

- Smart and Green electronic devices
- Cloud Computing and Internet of Things and Machine Learning
Business Status Overview

- **300+** commercial licensees
  - Geographically distributed in Taiwan, China, Korea, Japan, Europe, and USA
  - **600+** license agreements signed

- **AndeSight™ IDE:**
  - **~24,000** installations

- **Eco-system:**
  - **500+** partners

- **11B+** Accumulative SoC Shipped
3Q22 Revenue Analysis

YoY +41 %
QoQ +93.5 %

(NT$ thousands)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Revenue (NT$ thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Q21</td>
<td>192,228</td>
</tr>
<tr>
<td>2Q22</td>
<td>140,138</td>
</tr>
<tr>
<td>3Q22</td>
<td>271,137</td>
</tr>
</tbody>
</table>
22 Q1-Q3 Revenue Analysis

YoY
+13 %

(NT$ thousands)

21 Q1-Q3: 550,724
22 Q1-Q3: 622,304
22 Q1-Q3 Top 10 Customers Analysis by Revenue

Top 10 Customer Contributed 65% Revenue

(NT$ thousands)
22 Q1-Q3 Royalty Analysis

YoY
+4.2% (NT$ thousands)

<table>
<thead>
<tr>
<th></th>
<th>21 Q1-Q3</th>
<th>22 Q1-Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>170,904</td>
<td>178,112</td>
</tr>
</tbody>
</table>

170,904 NT$ to 178,112 NT$ represents a YoY increase of 4.2%.
22 Q1-Q3 Top 10 Royalty Contributors Analysis by Application

(NT$ thousands)

Top 10 Royalty Customers
Contribution Analysis: 86%

- Touch Panel (TW)
- Wireless/IoT (TW)
- Sensing (TW)
- Touch Panel (TW)
- Storage (CH)
- AI (US)
- Gaming (TW)
- Wireless/IoT (TW)
- Touch Panel (KO)
- Wireless/IoT (TW)
22 Q1-Q3 Revenue Analysis by Payment Model

- License Fee: 56%
- Running Royalty: 29%
- Maintenance: 14%
- Others: 1%
22 Q1-Q3 Revenue Analysis by Region

- Taiwan: 39%
- USA: 29%
- China: 23%
- Korea: 6%
- Europe: 1%
- Japan: 1%
22 Q1-Q3 Revenue Analysis by Product

- RISC-V: 36%
- V3: 64%

Pie chart showing revenue distribution across various products:
- N25: 18%
- N9: 14%
- N8: 13%
- AX45: 6%
- Customized IP: 6%
- A45: 6%
- NX27: 5%
- N13: 5%
- D45: 5%
- AX25: 4%
- N45: 3%
- NX25: 3%
- ACE: 3%
- N10: 3%
- D25: 3%
- E8: 2%
- LLVM: 2%
- N22: 1%
- AE250: 1%
- N7: 1%
- IAR: 1%
- OTHERS: 1%

ANDES TECHNOLOGY
3Q22 Revenue Analysis - RISC-V

(NT$ thousands)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>V3</th>
<th>RISC-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Q21</td>
<td>79,530</td>
<td>112,698</td>
</tr>
<tr>
<td>2Q22</td>
<td>60,920</td>
<td>79,218</td>
</tr>
<tr>
<td>3Q22</td>
<td>53,880</td>
<td>217,257</td>
</tr>
</tbody>
</table>

- V3
- RISC-V
Historical Commercial Agreements

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial IP agreements</th>
<th>Commercial Accumulated IP agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2007</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2008</td>
<td>3</td>
<td>6</td>
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<td>2009</td>
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<td>2011</td>
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<td>2012</td>
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<td>2019</td>
<td>38</td>
<td>46</td>
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<td>2020</td>
<td>46</td>
<td>58</td>
</tr>
<tr>
<td>2021</td>
<td>58</td>
<td>39</td>
</tr>
<tr>
<td>Q1-3 2022</td>
<td>428</td>
<td></td>
</tr>
</tbody>
</table>
Historical Revenue Analysis

License

Royalty
22 Q1-Q3 Consolidated Operating Expenses

YoY +48.6%

(NT$ thousands)

Q1-Q3 2021:
- R&D expenses: 233,417
- Administration expenses: 57,555
- Selling expenses: 153,157

Q1-Q3 2022:
- R&D expenses: 377,865
- Administration expenses: 81,724
- Selling expenses: 200,414

R&D expenses
Administration expenses
Selling expenses
22 Q1-Q3 Consolidated Operating Income

YoY - %

(NT$ thousands)

-60,000 -40,000 -20,000 0 20,000 40,000 60,000 80,000 100,000 120,000

Q1-Q3 2021: 105,753
Q1-Q3 2022: (38,304)

(NT$ thousands)
Q3 22 Consolidated Operating Margin

YoY +0.08 %
QoQ -%

12.18% 12.26%
3Q21 2Q22 3Q22

-53.67%

Q3 22 Consolidated Operating Margin
22 Q1-Q3 Consolidated Net Income

YoY
+271.2%

(NT$ thousands)

Q1-Q3 2021: 131,663
Q1-Q3 2022: 488,779

YoY +271.2%
22 Q1-Q3 Consolidated Net Profit Margin

YoY + 54.63 PT

- Q1-Q3 2021: 23.91%
- Q1-Q3 2022: 78.54%
3Q22 Consolidated EPS

<table>
<thead>
<tr>
<th>Quarter</th>
<th>EPS (NT$)</th>
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</thead>
<tbody>
<tr>
<td>3Q21</td>
<td>0.99</td>
</tr>
<tr>
<td>2Q22</td>
<td>1.42</td>
</tr>
<tr>
<td>3Q22</td>
<td>5.77</td>
</tr>
</tbody>
</table>

YoY: +4.78 $  
QoQ: +4.35 $
22 Q1-Q3 Consolidated EPS

YoY
+6.6 $

(NT$)

12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00

Q1-Q3 2021
3.05

Q1-Q3 2022
9.65
Product Applications

http://www.andestech.com
V5 Adoptions: From MCU to Datacenters

- **Edge to Cloud**
  - ADAS
  - AIoT
  - Blockchain
  - FPGA
  - MCU
  - Multimedia
  - Security
  - Wireless (BT/WiFi)

- **40nm to 5nm**

- **Many in AI**

- Datacenter/server AI accelerators
- SSD: enterprise (& consumer)
- 5G macro/small cells
Andes RISC-V Cores Adopted in SoC

- Single core
- 2-8 cores
- > 30 cores
- > 100 cores
- > 1000 cores

Andes Technology
New Products and Ecosystems

http://www.andestech.com
Andes RISC-V Product Roadmap

**RV32/RV64**
- **Cache-Coherent**
  - 1-4 Cores
- **Linux with FPU/DSP**
- **Fast/Compact with FPU/DSP**
  - Automotive Grade
- **Leading positions:**
  - The 1st company offering commercial RVP DSP CPU
  - The 1st company offering the most updated spec of commercial RVV vector processor
  - The 1st RISC-V core certified with ISO 26262 full compliance
  - Tools for RISC-V custom extension: ACE

**Vector Ext.**
- **27-Series:**
  - Vector Ext.
  - MemBoost
  - NX27V
  - A27/AX27
  - A27L2/AX27L2
  - and more.
- **5-stage (1.1 GHz)**

**45-Series:**
- Dual Issue
- Vector Ext.
- MemBoost
- N45/NX45/D45
- A45/AX45
- A45MP/AX45MP
- NX45V, AX45MPV
  - (1-8 Cores)
  - and more.
- **8-stage (1.2 GHz)**

**Superscalar**
- **60-Series:**
  - > 2.5 GHz
  - > 2x per-GHz performance of 45-Series
  - AX65
  - and more.
- **13-stage**

**Out of Order**
- **NEW**

**Leading positions:**
- The 1st company offering commercial RVP DSP CPU
- The 1st company offering the most updated spec of commercial RVV vector processor
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- Tools for RISC-V custom extension: ACE
AX45 Can Do More (vs. 64bit A-series)

- **A53**
  - 8-stage In-Order Dual Issue
  - Widely adopted by industries in many applications

- **AX45**
  - 8-stage In-Order Dual Issue
  - **Performance is better!**
    - Coremark/MHz: 1.35x
    - Dhrystone/MHz: 1.42x
Target Applications for 27 & 45-Series

- AI/Deep Learning
- AR/VR
- 5G
- Networking
- Storage
- Video Surveillance
- ADAS
- V2X (Vehicle to Everything)
- IVI (In-Vehicle-Infotainment)

Metaverse and more...
AX60-Series OOO Application Processors

**Architecture:**
- RV64 GCBK
- Vector Extension
- SV39/48 (and other VM extensions)
- Cache Management Operations
- ePMP/PMA
- Andes Custom Extension™ (ACE)
- Hypervisor
- Interrupt controller: PLIC and AIA
- Debug and Trace

**Microarchitecture**
- Out-of-order superscalar
- Advanced memory subsystem
- Multicore cluster
- CHI-based scale-out:
  - Single-core as the building block
  - Cluster as the building block
- Error protection
- Power management (retention and PowerBrake)
AX65: 1st Member of AX60-Series

- 4-way 13-stage superscalar
- Multicore cluster: 1~8 cores
- Private caches:
  - 64KB, multi-banked
  - Alias handling in HW
- Shared cache: up to 8MB
- CPU and CM: async clocks
- Bus Ports (Memory, MMIO, Coherent IO): 256 bits
Certificate Granted

- **N25F-SE:**
  - Andes 1\textsuperscript{st} Safety Enhanced core with ISO 26262 Full Compliance

### In-Cabin Radar
- Radar Subsystem: N25F-SE
- Host Controller: N25F-SE
- Memory: Peripheral

### Auto TDDI
- Auto TDDI Subsystem Diagram

### Auto MCU
- Auto MCU Subsystem Diagram

### Auto Storage
- Auto Storage Subsystem Diagram

**Taking RISC-V\textsuperscript{®} Mainstream**
Thank You

http://www.andestech.com
+886-3-5726533