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.
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Company Overview

http://www.andestech.com
Andes Highlights

- Founded in March 2005 in Hsinchu Science Park, Taiwan, ROC.
- Well-established high technology IPO company
- Over 400 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)
- Top 500 High-Growth Companies Asia-Pacific 2023

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:**
  - ~**25,000** installations

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

- **12B+** Accumulative SoC Shipped
Operation Results

http://www.andestech.com
1Q23 Revenue Analysis

(NT$ thousands)

- YoY +6.7%
- QoQ -27.3%

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Revenue (NT$ thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22Q1</td>
<td>211,029</td>
</tr>
<tr>
<td>22Q4</td>
<td>309,517</td>
</tr>
<tr>
<td>23Q1</td>
<td>225,096</td>
</tr>
</tbody>
</table>
1Q23 Top 10 Customers Analysis by Revenue

Top 10 Customer Contributed 81% Revenue

SSD (TW), AI (US), Touch Panel (TW), Sensing (TW), CMOS (CN), Ethernet PHY (TW), Wireless/IoT (TW), AI (TW), MFP (CN), GPS (CN)
1Q23 Royalty Analysis

(NT$ thousands)

YoY -17.9 %  QoQ -2.9 %

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>22Q1</td>
<td>60,988</td>
</tr>
<tr>
<td>22Q4</td>
<td>51,613</td>
</tr>
<tr>
<td>23Q1</td>
<td>50,094</td>
</tr>
</tbody>
</table>
1Q23 Top 10 Royalty Contributors Analysis by Application

(NT$ thousands)

Top 10 Royalty Customers Contribution Analysis: 90%

- Sensing (TW)
- Touch Panel (TW)
- Wireless/IoT (TW)
- Gaming (TW)
- Wireless/IoT (CN)
- SSD (TW)
- Wireless/IoT (TW)
- Wireless/IoT (TW)
- Touch Panel (TW)
- Storage (CN)
1Q23 Revenue Analysis by Payment Model

- License Fee: 59%
- Running Royalty: 22%
- Maintenance: 18%
- Others: 1%
1Q23 Revenue Analysis by Region
1Q23 Revenue Analysis by Product

- RISC-V
- V3

- N25: 27%
- NX45
- N8
- N45
- ACE
- N10
- N9
- AX45
- NX25
- A45
- N13
- D10
- N22
- D25
- N7
- AE250
- NX27
- Customized IP
- Other
1Q23 Revenue Analysis - RISC-V

(NT$ thousands)

<table>
<thead>
<tr>
<th></th>
<th>1Q22</th>
<th>4Q22</th>
<th>1Q23</th>
</tr>
</thead>
<tbody>
<tr>
<td>V3</td>
<td>111,644</td>
<td>92,331</td>
<td>59,673</td>
</tr>
<tr>
<td>RISC-V</td>
<td>99,385</td>
<td>217,186</td>
<td>165,423</td>
</tr>
</tbody>
</table>

53%  70%  27%

73%
V5 Adoptions: From MCU to Datacenters

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

❖ 40nm to 3nm

❖ Many in AI

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

**5-stage (1.1 GHz)**
- N22
  - 2-stage (700 MHz)
- D23
  - 3-stage (800 MHz)

**Vector Ext.**
- A25MP
  - AX25MP
- A25
  - AX25
- N25F
  - D25F
  - NX25F
  - N25F-SE
  - D25F-SE

**27-Series:**
- Vector Ext.
- MemBoost
- NX27V
- A27/AX27
- A27L2/AX27L2
  - and more.

**45-Series:**
- Dual Issue
- Vector Ext.
- MemBoost
- N45/NX45/D45
- A45/AX45
- A45MP/AX45MP
- NX45V, AX45MPV
  - (1024-bit VPU, 1-8 Cores)
  - and more.

**60-Series:**
- > 2.5 GHz
- > 2x per-GHz performance of 45-Series
  - AX65
  - New

**Superscalar**
- 8-stage (1.2 GHz)

**Out of Order**
- 13-stage

**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
AX45 Can Do More (vs. 64bit A-series)

<table>
<thead>
<tr>
<th></th>
<th>A53</th>
<th>Andes AX45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coremark/MHz</td>
<td>4.18</td>
<td>5.63</td>
</tr>
<tr>
<td>Dhrystone/MHz</td>
<td>2.3</td>
<td>3.27</td>
</tr>
</tbody>
</table>

- **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, 60-Series**

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

*Metaverse, HPC and more...*
The Andes AX60 Processor Series

- A new generation of AndesCore™
  - Advanced Performance 13-stage Out-of-Order Superscalar Multicore
  - Latest RISC-V Architecture
  - Supported by Andes Long-term Roadmap
    - AX65 as the first member of the AX60 series
    - More products based on the AX60 micro-architecture planned, including for automotive functional safety

- AndesCore™ AX65
  - Offering performance surpassing CA72
  - > 2.5 GHz, > 2x per-GHz performance of AX45MP
  - Engaging with early customers
AndesCore AX65: 1st Member of AX60-Series

- 64-bit, RV64GCBK
- 8-core Multiprocessor
- 13-stage OoO Pipeline
- 128-entry Reorder Buffer (ROB)
- 4-wide Frontend Decoder
- 8 Execution Pipeline engines
- 2-level Branch Target Buffer (BTB)
- TAGE-L Branch Predictor
- 1024-entry 4-way L2 TLBs
- 64 KB, 4-way Private I/D Caches
- 8 MB, 16-way Shared Cache
- 256-bit AXI4, MMIO and IOCP Buses

AX65 Multicore

- Interrupt Controller
- Debug Support
- Coherence Manager (CM)
- Shared Cache

MMIO

Memory

Coherent IO

AX65core0

Private $

...$

AX65core7

Private $

batch, fetch, align & buffer

decode, rename, dispatch

issue, register read

+br & misc

memory

floating point

ALU

WB

x3

x1

x2

x2
Andes is *Driving* Innovations in Automotive

with Industry’s 1\textsuperscript{st} RISC-V ISO 26262 Fully Compliant Core, N25F-SE

In-Cabin Radar

- Radar Subsystem
  - N25F-SE
- Memory
  - Peripheral

CMOS Sensor

Auto TDDI

Auto MCU

Auto Storage

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

http://www.andestech.com
+86-3-5726533
N25F-SE Industry First ISO 26262 Full Compliance RISC-V Processor

- ISO 26262 Certification for Development Process: ASIL-D
  - In Dec. 2020, Andes certified by SGS-TÜV Saar GmbH
- ISO-9001 QMS achieved and maintained since 2010
- ISO 26262 Edition 2018 ASIL B Compliant Certification for N25F-SE
  - ISO 26262-2,4,5,8,9
  - Covers all the sections applicable to CPU core