BlueBox 3.0 THIRD-GENERATION, AUTOMOTIVE HIGH PERFORMANCE COMPUTE (AHPC) DEVELOPMENT PLATFORM

OVERVIEW
The BlueBox 3.0 embedded development platform series prototypes existing and future automated driving (AD) and new EE architectures like zonal and central EE architectures.

Based on the high-performance LX2 automotive microprocessor and S32G gateway microprocessor, the BlueBox 3.0 system provides the enhanced performance required to prototype AD and central compute workloads in a modular and scalable open platform with system-level safety implementation and a software SDK.

KEY FEATURES
- High-performance LX2160A automotive processor with up to 16 Arm® Cortex®-A72 cores
- S32274 gateway processor with ASIL D Functional Safety
- Supports Kalray MPPA for Math and Neural Network acceleration with SW integration
- SJA1110 automotive Ethernet switch with TSN support
- Modular and scalable open platform supporting rich expansion options to prototype various configurations and connections to multiple ECUs and sensors
  - Up to 6 PCIe® expansion slots
- Up to 8 Ethernet ports
- True automotive embedded platform featuring end-to-end automotive-grade system-on-chip ICs
- System-level safety implementation with the device-level safety collaterals

EASE OF DEVELOPMENT
- BlueBox 3.0 SDK: Complete AD and central compute software development kit package including the intercommunication framework and Linux® BSP
- Supports Robot Operating System (ROS) and fast data distribution service (DDS) intercommunication framework
- Easily customizable
- Development environment for mainstream vehicles

TARGET APPLICATIONS
- AD L2+ applications
  - Highway autopilot
  - Automated parking
- High performance compute for zonal and central EE architectures
BlueBox 3.0 BLOCK DIAGRAM (T2 CONFIGURATION)

LX2160A AND BlueBox 3.0 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Core</th>
<th>16 x Arm® Cortex®-A72</th>
<th>Package</th>
<th>40 x 40 FCBGA (1517 pins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Up to 2.2 GHz</td>
<td>Power</td>
<td>Support safety architecture w/ auto PMICs</td>
</tr>
<tr>
<td>DDR</td>
<td>2 x 72b DDR4 w ECC</td>
<td>Front Panel</td>
<td>From LX2: USB 3.0, MicroSD slot, MicroUSB UART debug (shared)</td>
</tr>
<tr>
<td>Cache</td>
<td>16 MB L2 and platform</td>
<td>Rear Panel</td>
<td>From S32G: MicroSD slot, MicroUSB UART debug (shared)</td>
</tr>
<tr>
<td>PCIe®</td>
<td>6 x Gen3</td>
<td></td>
<td>From LX2: 4 x 10G, 2 x 1G, auto connectors for CAN</td>
</tr>
<tr>
<td>Ethernet</td>
<td>Multiple MACs (up to 100G)</td>
<td></td>
<td>From S32G: 2 x 1G, auto connectors for CAN and FlexRay</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>PCIe® slots</th>
<th>Kit Contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLBX3-T2</td>
<td>2 PCIe slots</td>
<td>Full system, including the chassis and accessories</td>
</tr>
<tr>
<td>BLBX3-T6</td>
<td>6 PCIe slots</td>
<td>Full system, including the chassis and accessories</td>
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For more information, please visit: www.nxp.com/bluebox