Configurable Mixed-Signal ICs (CMIC)
John Teegen, VP Configurable Mixed-Signal Business Unit
Forward Looking Statements

This document contains “forward-looking statements” that reflect management’s current views with respect to future events. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “project” and “should” and similar expressions identify forward-looking statements. Examples include statements regarding financial metrics, operational matters, and closing conditions and regulatory approvals required under the new contract with Apple. Forward-looking statements are subject to risks and uncertainties, including, but not limited to: an economic downturn in the semiconductor and telecommunications markets; changes in currency exchange rates and interest rates, the timing of customer orders and manufacturing lead times, insufficient, excess or obsolete inventory, the impact of competing products and their pricing, political risks in the countries in which we operate or sale and supply constraints. If any of these or other risks and uncertainties occur (some of which are described under the heading “Risks and their management” in Dialog Semiconductor’s most recent Annual Report) or if the assumptions underlying any of these statements prove incorrect, then actual results may be materially different from those expressed or implied by such statements. We do not intend or assume any obligation to update any forward-looking statement which speaks only as of the date on which it is made, however, any subsequent statement will supersede any previous statement.
CMICs - Creating a New Product Category
Disrupting Incumbent Discrete Component Suppliers

Initially Focused on Consumer Market

- CMIC platform ideal for major markets
  - Cost sensitive
  - Fast time-to-market
  - Reliable
- Universal circuits

Independent of End-Market Growth

- Large existing addressable markets
  - Consumer, Mobile, IoT, Industrial, Automotive, Communications, Computing

CMIC SAM ($M)

<table>
<thead>
<tr>
<th>Market</th>
<th>2017</th>
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<tbody>
<tr>
<td>Notebook</td>
<td>$331</td>
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<tr>
<td>Tablet</td>
<td>$152</td>
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<tr>
<td>Mobile</td>
<td>$379</td>
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<td>IoT</td>
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<td>Consumer</td>
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<table>
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<th>Market</th>
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<td>Notebook</td>
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<td>IoT</td>
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<tr>
<td>Consumer</td>
<td>$512</td>
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Source: Gartner 2018, Dialog Estimates
Software-based CMIC development

A New Design Paradigm

**Software-Based Development Tools**

Proprietary software platform to design, test and deploy analog circuits

**CMIC**

CMIC functionality is custom configured in software and programmed onto silicon at production

Programmable CMIC
Dialog CMIC Value Proposition

Faster Time to Market
Easy to use development tools exploit the power of configurability. Short lead times.

Integrate and Differentiate
Implement new features in devices as small as 1.0 x 1.2 mm. No NRE¹.

Shrink PCB Footprint
Fewer components and less PCB complexity. Lower Cost.

Reduce Power Consumption
Extend battery life with fewer devices. Easily manage power in a GreenPAK.

Adapt Design as Needed
Adapt to changing requirements quickly. Spin new prototypes in minutes.

Secure
Circuit implementation is not visible to competition.

¹ Non-recurring engineering costs.
Replaces simple discrete logic, analog comparators and low-end 8-bit analog-digital converters
Create non-standard reset ICs and other ASSPs without tooling or NRE costs
Provides solution to solve IC design challenges at any point in the design cycle
Why are Dialog CMICs so Popular?

- No NRE
- No tooling
- No commitment
- 4-6 week lead time
- Design support
- In-system & factory programming

STEP 1
Place unprogrammed GreenPak into development kit socket.

STEP 2
Use GreenPak Designer software to graphically design your IC.

STEP 3
Click program to freeze GreenPak’s OTP NVM.

STEP 4
Your custom IC is ready for use.

Customer Value Proposition
CMICs – A Continuous Track Record of Innovation

Increasing Functionality Expands TAM and ASPs

- First Programmable Mixed-signal Device
- CuFET Process
- Linear and Switching Regulators

First CMIC Introduced
World’s First XTL Replacement IC
Programmable Power
High Voltage


Power
- GreenFET
- GreenFET2
- GreenFET3
- CurrentPAK
- HFET1
- LDO PAK
- LDO PAK w/DC-DC

- 6 mohm/mm²
- 4 mohm/mm²

Timing
- GreenCLK
- GreenCLK2
- GreenCLK3
- PLL

- 32.768 kHz replacement

Interface
- GreenPAK
- GreenPAK2
- GreenPAK3
- GreenPAK4
- GreenPAK5
- GreenPAK6

- Low Cost 1.2mm² size
- Improved Analog
- Zero Latency
- ASM, I2C
- nA Power
- Analog
Customers: Engaged with the World’s Leading OEMs

- 4 Billion Units
- 300 Customers
- 3,000 Designs
Opportunities to Deepen Customer Relationships

Number of Sockets

Early Engagement

Program-Wide Adoption

Company-Wide Adoption

“Land and Expand”
CMICs – A Multi-Pillar Growth Strategy

<table>
<thead>
<tr>
<th>Expand Share with Existing OEM Customers</th>
<th>- Introduce new product capabilities to accelerate customer penetration</th>
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<tbody>
<tr>
<td>Sell to New Customers</td>
<td>- Expand adoption with leading OEMs in Europe and Asia</td>
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<tr>
<td>Expand into Adjacent Markets</td>
<td>- Leverage sales and marketing efforts to promote expansion of the CMIC platform to Mobile, IoT and Automotive markets</td>
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<tr>
<td>Extend CMIC Capabilities</td>
<td>- Leverage Dialog IP and expertise to extend functionality of CMICs</td>
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Synergistic Ecosystem: Increasing Content Across Dialog Product Portfolio

IoT

~ 1-3 CMICs Per Device

Bluetooth

CMIC

Mobile and Computing

~ 10 CMICs Per Device

CMIC

PMIC

CMIC

Automotive

10+ CMICs Per Vehicle

Bluetooth

(ToF / TPMS)

CMIC

PMIC

(Infotainment)

CMIC
Key Takeaways

- Dialog is creating a configurable IC market with no direct competition
- CMICs allow customers to deliver products with faster design cycles and lower development costs
- Board designers can replace multiple discrete components with a single custom product
- CMICs expand Dialog’s customer footprint by building on the flexibility and universal utility of the product
- CMICs provide opportunity to cross-sell customers across the product portfolio
Powering the Smart Connected Future

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