

PINK IS THE NEW GREEN

ENABLING ENERGY EFFICIENT SOLUTIONS



IEEE 2012 in Dresden, Silicon Saxony
Thilo von Selchow – CEO ZMDI

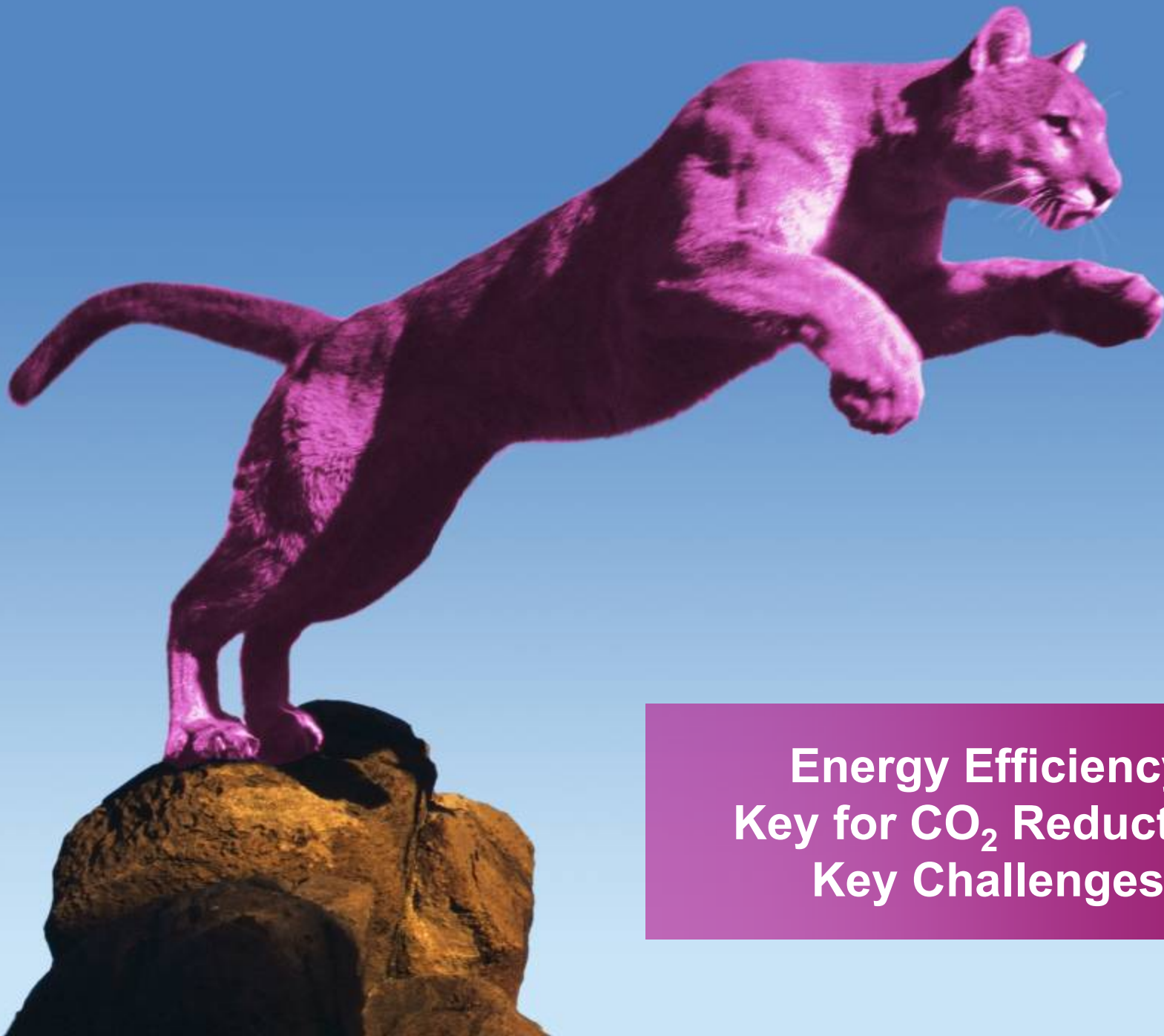
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Semiconductors and the drive towards energy efficiency

ZMDI – Smart Power for CO₂ Reduction



**Energy Efficiency
Key for CO₂ Reduction
Key Challenges**

Energy is a Key Challenge for the next decades

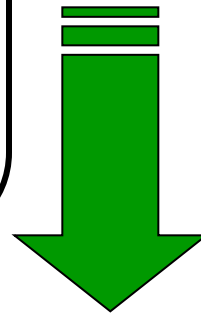
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The Fact

x2 Energy demand
by **2050**

The Need

÷ 2 CO₂ Emissions
to avoid dramatic climate
changes (vs. 1990 level)



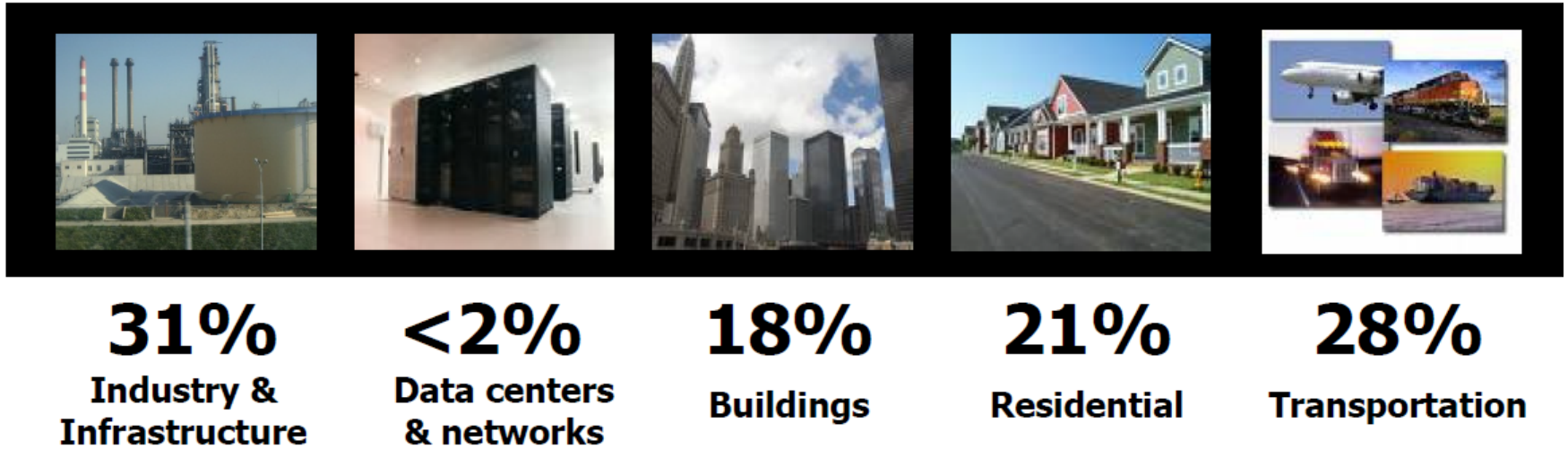
THE SOLUTION

**Greater Investment in Clean Energy
Generation & Energy Efficiency**

Source: IPCC 2010
Source: IEA 2010

ZMDI Understands the Challenge

ZMDI Customers' Market Segments represent **72%** of the Global Energy Consumption



SMART Power and Sensing to:

- ⇒ ...enable energy efficient solutions
- ⇒ ...help reducing CO₂

SMART Power helps to adress the key challenge

ZMDI Vision

To be first choice in analog mixed signal solutions enabling energy efficiency.

ZMDI Mission

“We are the innovative provider of **high performance analog and mixed-signal semiconductor solutions.**”

“We provide **high quality products and services** of value to our customers on time.”

“We enable our customers to create most **energy-efficient products** for **Power Management and Sensors** in their markets.”

ZMDI Vision & Mission

Automotive savings till now



Quantity of liters/petrol
15.933.361.999 lt



CO2 Emission reduction
39.833.404.997 kg



Average Household
consumption*
898.305

* - 1 European average household
consists of 2 adults and 2 children with
9,65 tons / a emission of CO2

RESULT: ZMDI contributes to CO₂ Reduction



**Smart Power Management...
Ready to jump!**

Business perspectives

Sensor Interfaces and
Conditioning

Actuators and
Drivers

Power
and Lighting

HIGH PERFORMANCE ANALOG ICs



Transportation



Medical



Industrial



Consumer



Lighting



Computing/Infrastructure

ZMDI Products and Target Markets

Sensor technology and system Integration drives higher energy Efficiency

ZMDI System Solutions



2005/Present
150+ sensors : 6 Litres/100kms



1990/2000
6-20 sensors : 11 Litres/100kms



1970/1980
2-3 sensors : 19 Litres/100kms

Driving toward Energy Efficient Solutions

SMART Power Solutions...



Server
Data Centre

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Telecom

⇒ ...for Energy Efficient Solutions



Motherboard



High-end
Consumer

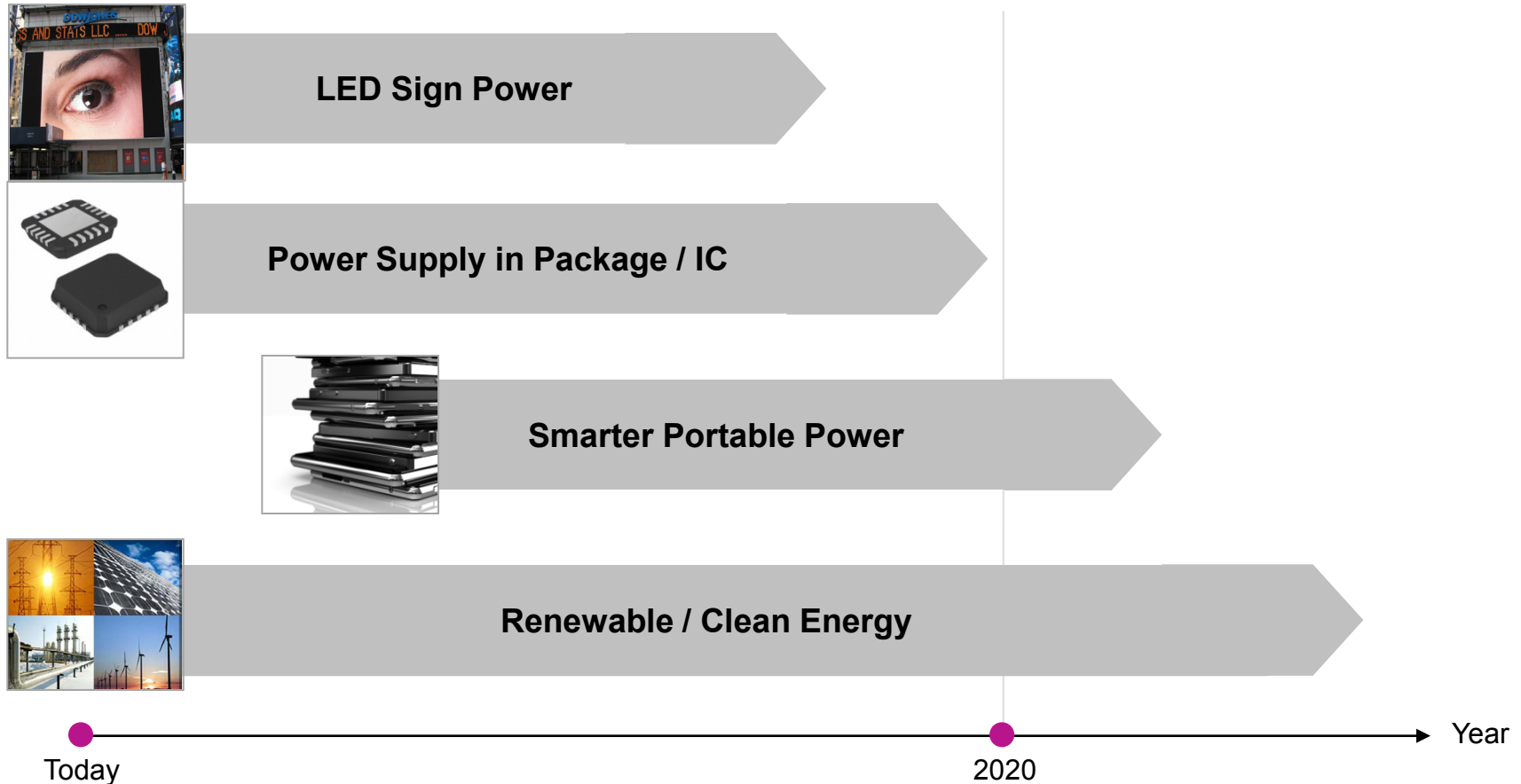


Industrial

ZMDI addresses SMART Power applications

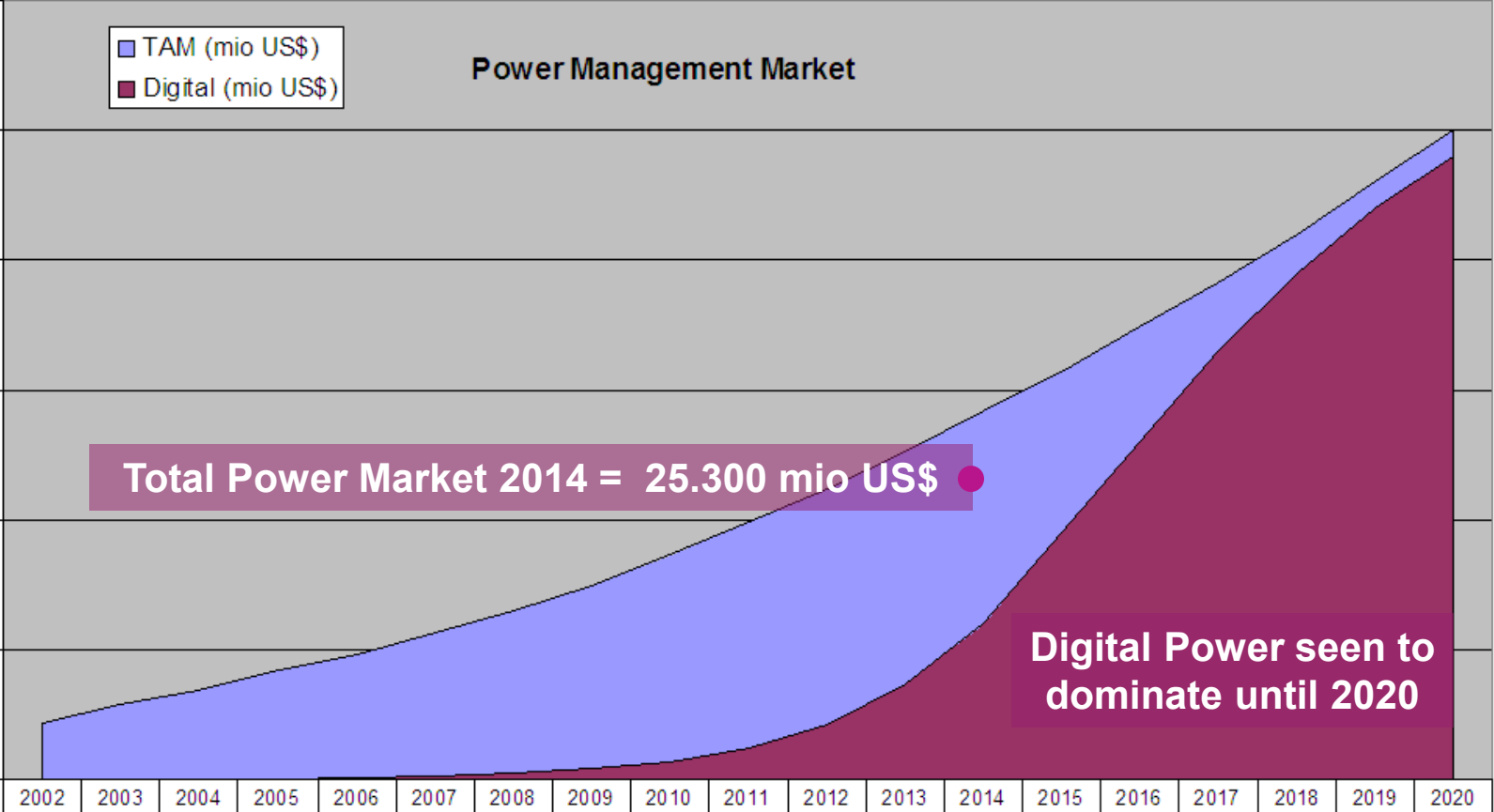
SMART Power solutions enable...

⇒ ...new, future opportunities and markets



ZMDI addresses SMART Power applications

SMART/Digital Power growing fast (30%-50% CAGR)



Source: Darnell

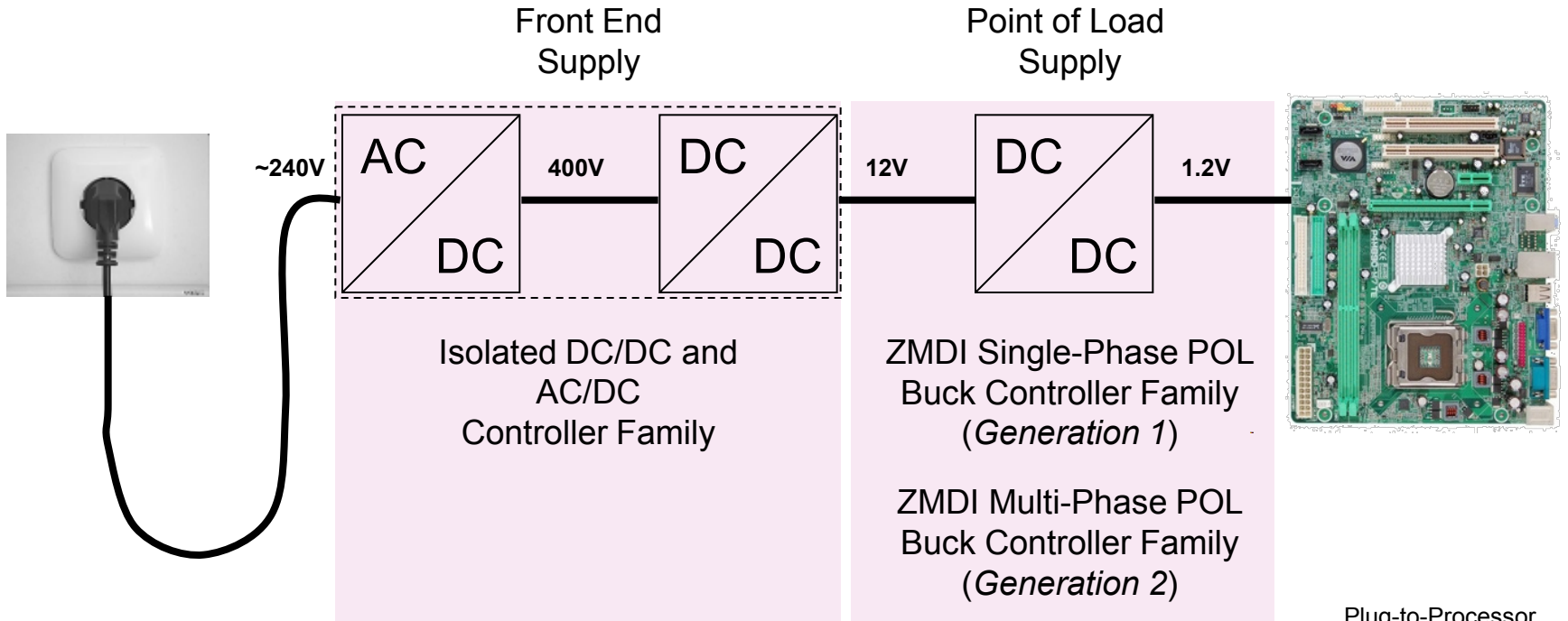
ZMDI addresses SMART Power applications

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**Smart Power Management
State of the Art Technology**

Smart Power enables best in class efficiency

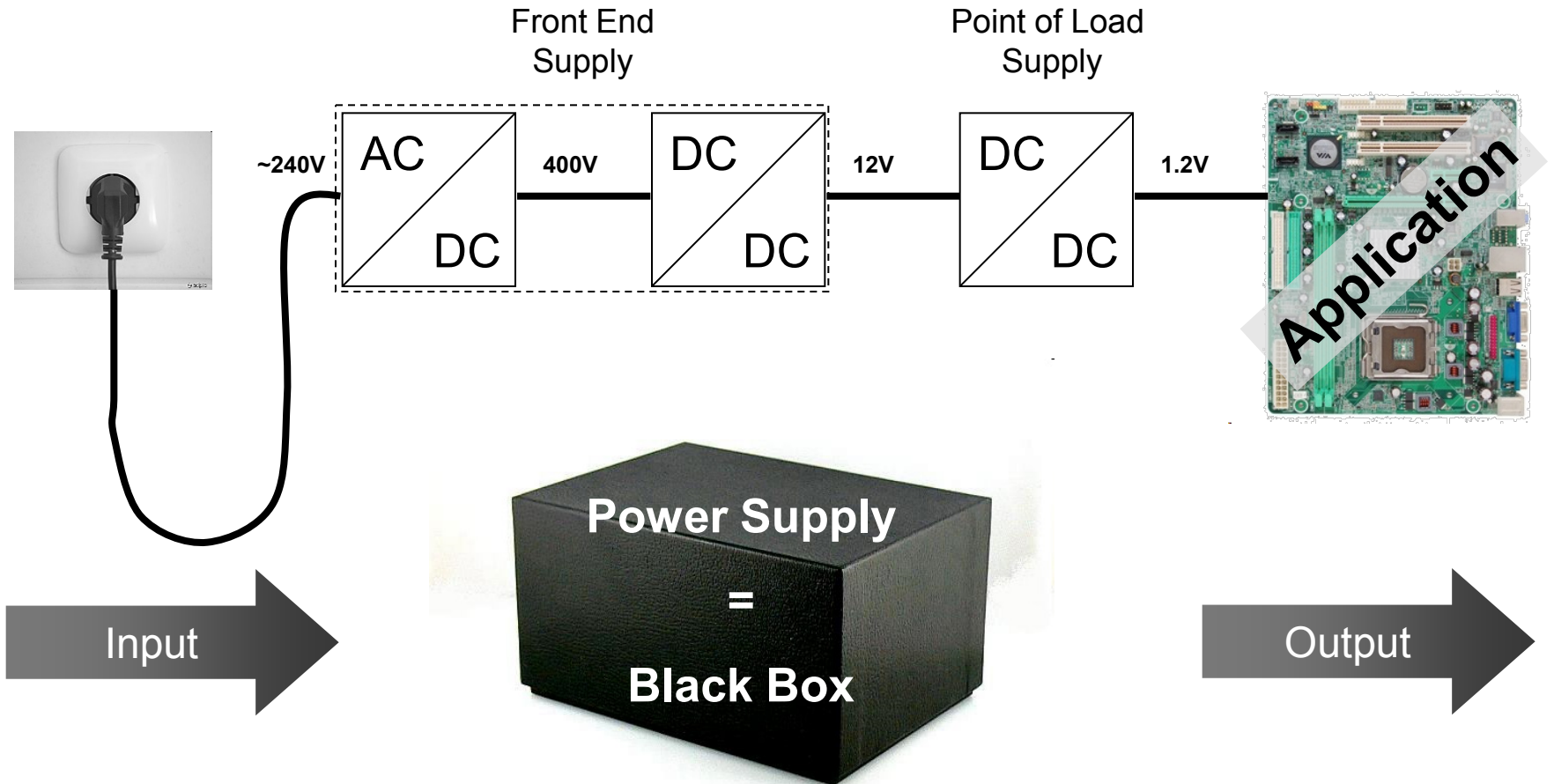


| | | | | |
|--------------------|----------------|----------------|----------------|----------------|
| Today: | 93%-95% | 95%-98% | 88%-90% | 78%-84% |
| Efficiency Target: | 98% | 98% | 94% | 90% |

Plug-to-Processor Efficiency:

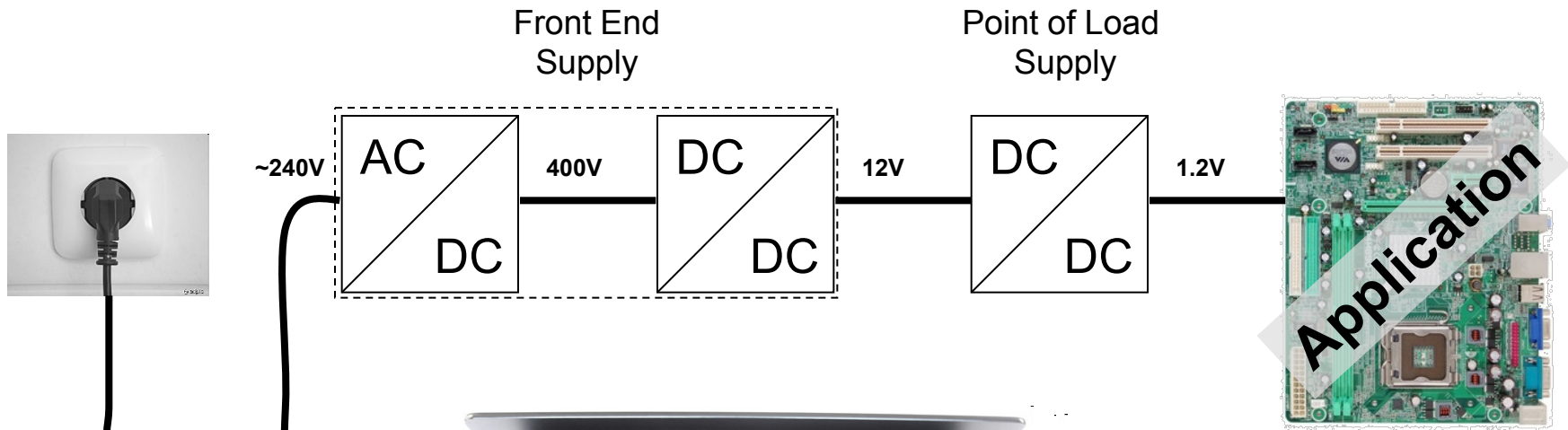
Smart Power can improve efficiency by over 10%

Traditional Power Conversion solution:



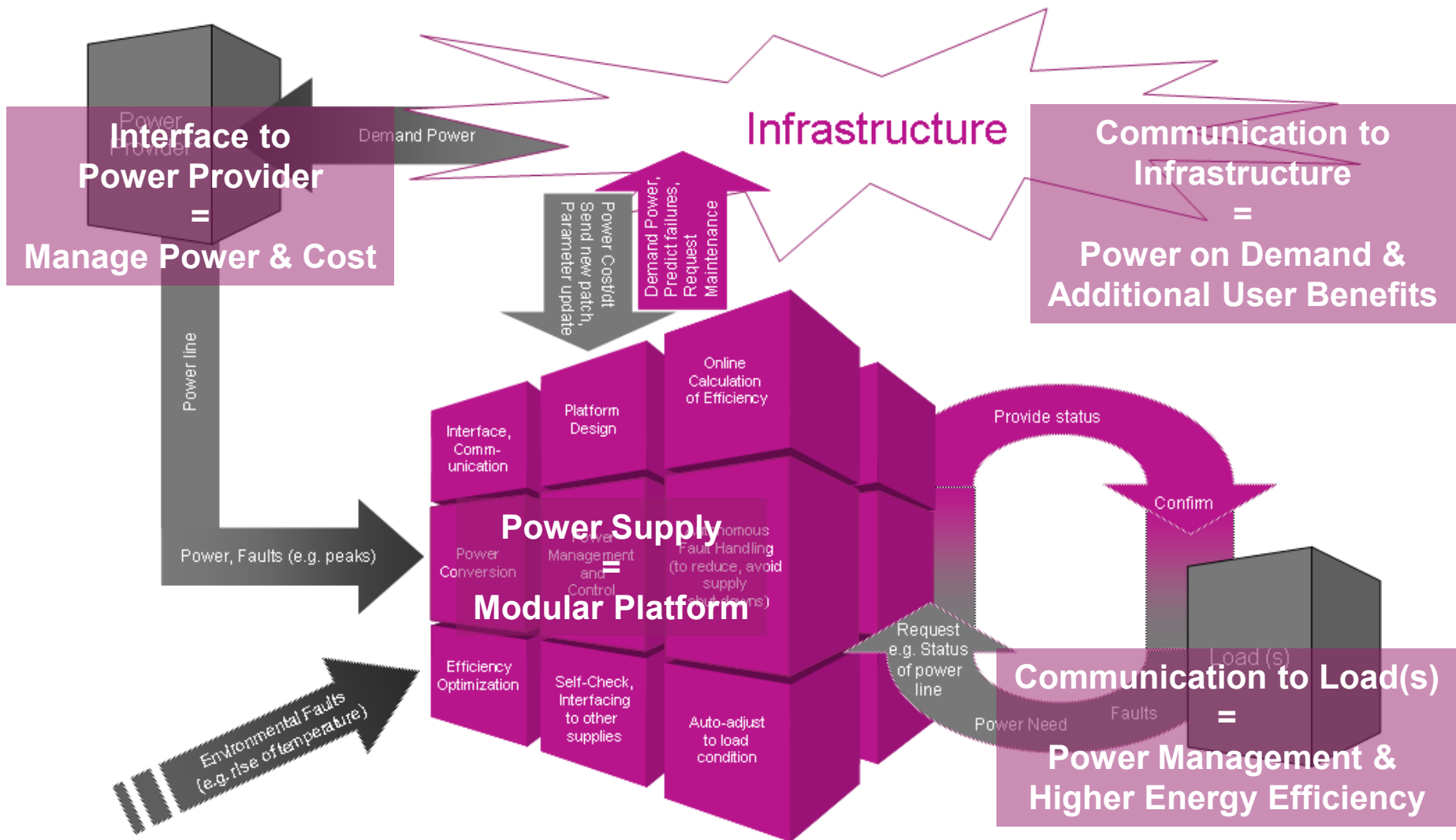
ZMDI addresses SMART Power applications

What is driving SMART Applications?



ZMDI addresses SMART Power applications

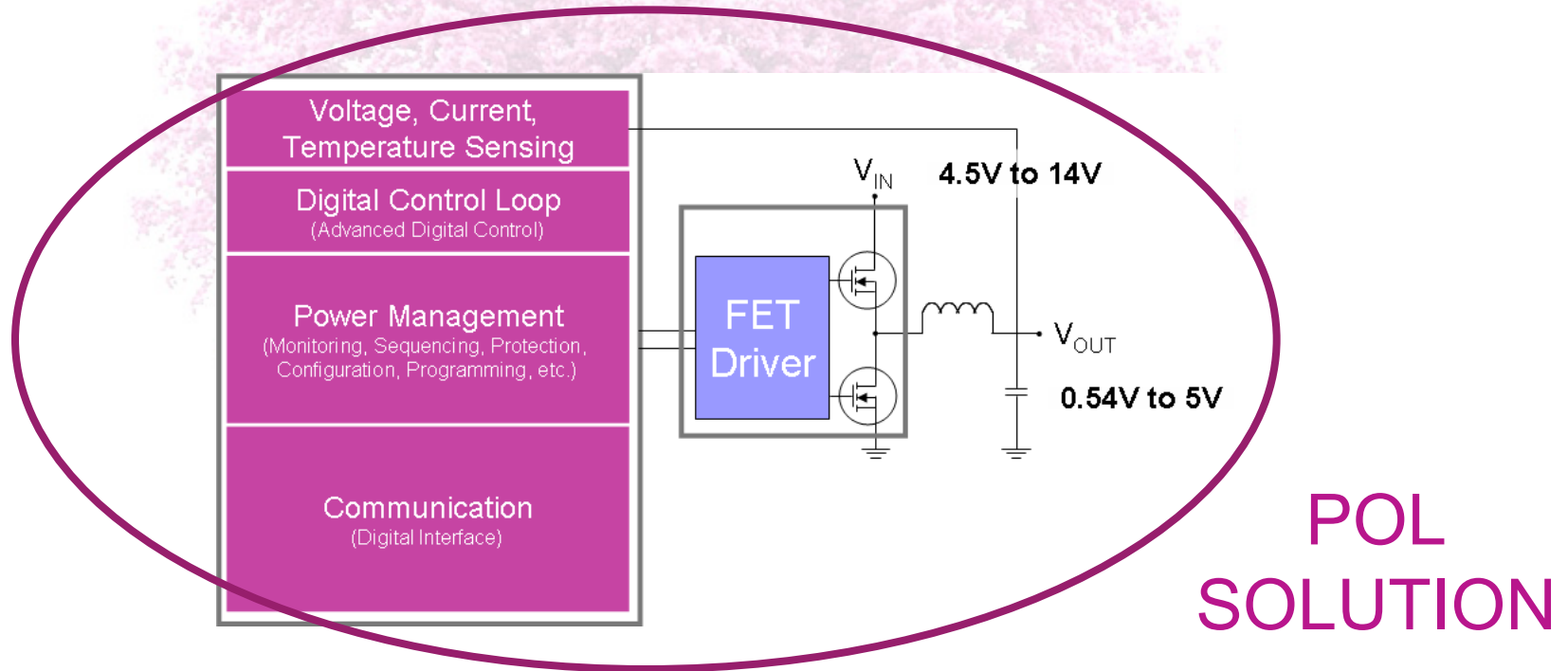
How does a SMART Solution look like?



ZMDI addresses SMART Power applications

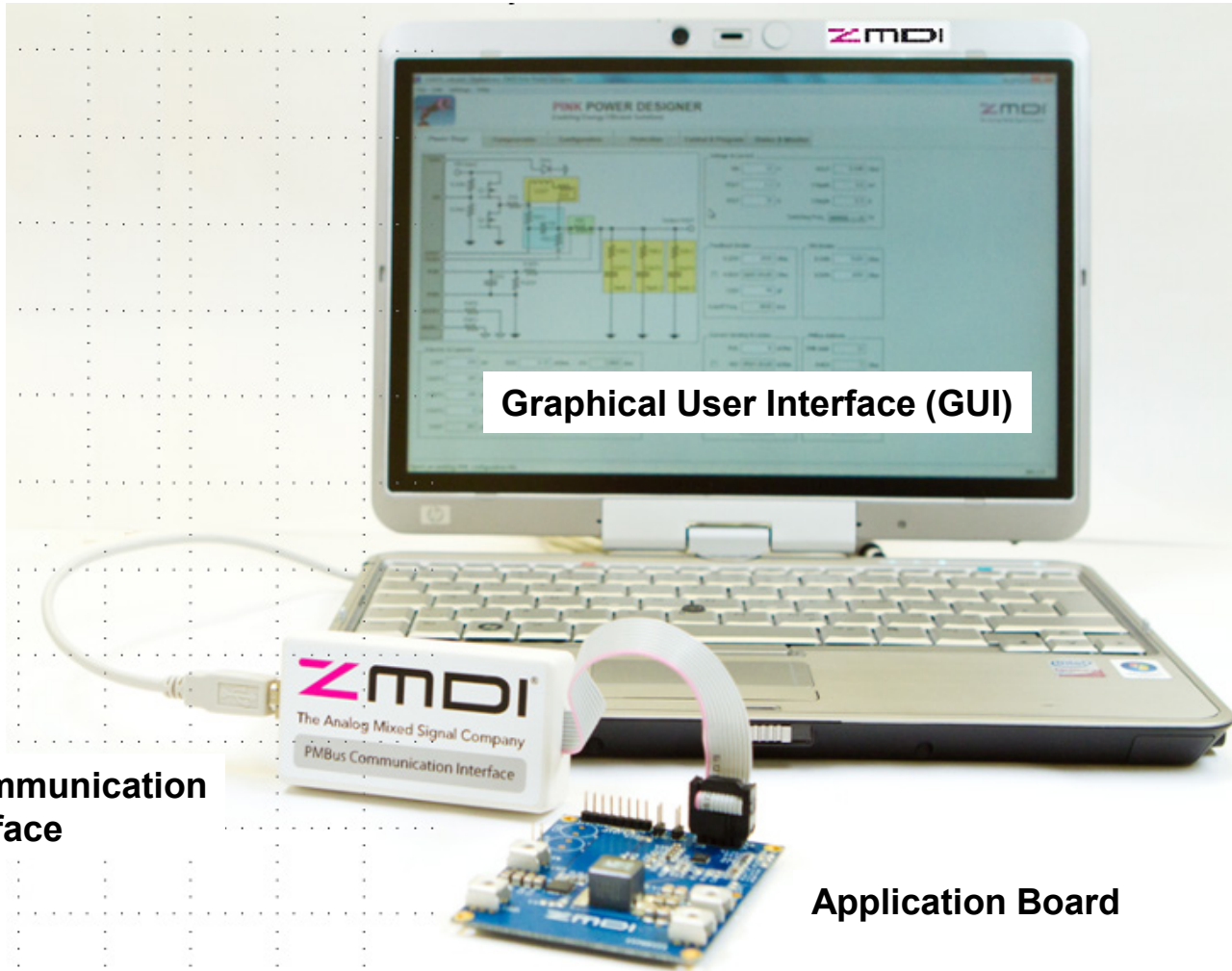
SMART Applications require...

- ⇒ ...solution competence
- ⇒ ...broader knowledge
- ⇒ ...cooperations & partners to provide “solutions”



ZMDI offers a POL Smart Power solution

Easy-to-use



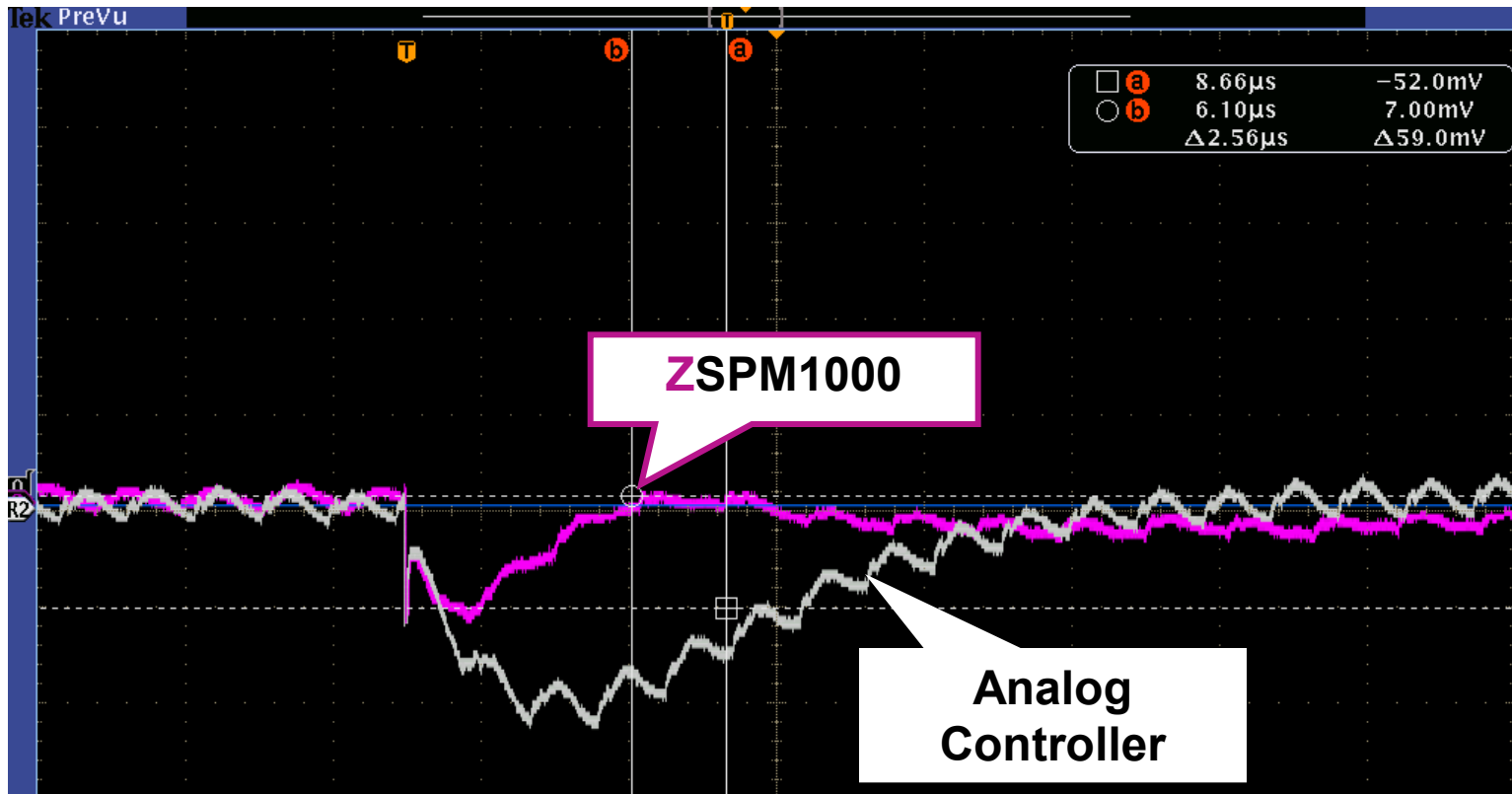
Graphical User Interface (GUI)

PMBus™ Communication Interface

Application Board

Evaluation Kit (ZSPM8000-KIT)

Best-in-class load step-Response Performance



**Improved settling time and reduced amplitude!
Directly leads to reduced output capacitance.**

ZMDI's Tru-Sample™ Technology



**Smart Power Management
Challenges 2020**

- Communication capabilities
- Ease of use
- Convergence of “overhead functions”
- Performance
- Reliability
- 3D integration

Key Challenges for SPM

- Energy demand continues to increase while we need to drive CO₂ emissions down
- Smart Power Solutions with digital Feedback loop can help solve this dilemma
- Substantial energy efficiency gains can be made, if the 25 bn \$ Power market turns digital
- ZMDI as a company is committed to energy efficiency solutions and CO₂ reduction
- ZMDI is strategic partner for high analog and mixed signal system integration

Summary

Thank you!



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We provide...

- first-time right,
- innovative,
- high quality &
- energy efficient

...Analog Mixed Signal Solutions!

www.zmdi.com

ZMDI[®]

The Analog Mixed Signal Company