



International Electronics Manufacturing Initiative

# Automotive Products PEG Emulator Changes For 2006

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*Jim Spall, Delphi*

*D. Stephens Convention Center*

*September 30, 2005*

*Galen Reeder, Delphi*

*Productronica, München*

*16 November 2005*

- **Increased demand for Hybrid Vehicles with gasoline prices at \$3.00 per gallon (U.S.)**
  - Thermal management issues
  - High voltage, multiple voltage
  - Weight and size constraints
  - Energy storage/packaging
  - Equal or better performance
    - Reliability
    - Efficiency
  
- **Increased demand for Diesel Vehicles (Europe)**
  - Stricter emissions controls, quieter engines, and higher performance require better electronics
  - High voltage applications
  - Extreme operating conditions in heavy duty market

- **Increased demand for Sensors in Automotive Products**
  - **Active safety systems**
    - **Collision Avoidance products**
      - **Driver monitoring**
      - **Forward, side and rear obstacle monitoring**
  - **Occupant detection (Safety Systems)**
  - **Crash event sensors**
  - **“Air” and vapor chemical sensors**
  - **Thermal, optical and ultrasonic sensors for comfort and security**

- **Increased demand for Entertainment Products**
  - **Satellite Radio**
  - **DVD Players**
  - **Analog, digital and hybrid TV tuners**
  - **Larger Displays, and more displays**
  - **Integration of all consumer options:**
    - **MP3**
    - **PDA**
    - **Hands free phones**
    - **Bluetooth**
    - **PCs**
- **Increased demand for Navigation Products**
- **Increased demand for Telematics Products**
  - **Tolling**
  - **Global logistics tracking**

- **Increased software control with OEM specific communication protocols**
  - **More memory requirements**
- **Emerging industry guidelines for software “modules”**
  - **Software as a product**
  - **Reused software between OEMs and different controllers**
- **Upgradeable software after market by design ???**
  - **Higher integration of consumer products**
  - **Personal configuration**

- **Increasing demand for more electronics per vehicle**
  - **More electronic boxes per vehicle or an up-integration of functions per box**
- **Constant demand for more functionality, reduced cost, smaller size, and less mass**
- **OEM's are asking for Pb free products in the MY 2010 time frame**
- **Quality and reliability of automotive electronics directly impact the auto buyers' preference**
  - **Expectations are increasingly higher**
  - **Large gap between automotive and consumer reliability expectations**

- **Row 32 – Final Product Assembly Cost – Needs a better description for how to measure this cost. Variable number based on the product. Define State of the Art better.**
- **Row 39 – Energy Cost – Suggest removal of this line**
- **Row 40 – Memory Cost – Separate numbers for Flash versus SRAM**

- **Row 14 remove totally – Not applicable to key attributes spreadsheet**
- **Row 26, Column 4 change metric to: \$/mm – Better metric for global discussion**
- **Row 16, column 7 change to \$/hour – Better granularity**
- **Etc**
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