



ATC18RHA SMPW Commercial Offering

**MPW Workshop
ESTEC June 17th, 2004**





Summary

- **Definitions**
- **Orders and Invoices**
- **Cancellation charges**
- **Die sizes and packages**
- **NRE prices**
- **Leadtimes**
- **Preliminary SMPW run dates**
- **Conclusion**

Definitions (1)

- **“ESA Customers”, “ESA Designs”**
 - **ESA will pay for the MPW Foundry NRE directly to Atmel**
 - **Customer will pay for Atmel NRE**
- **“Non ESA Customers”, “non ESA designs”**
 - **Customer will pay for both Atmel NRE and MPW Foundry NRE**
- **ESA SMPW run**
 - **SMPW run which is funded by ESA**
 - **Open to any European design, ESA or non ESA**
- **Atmel SMPW run**
 - **SMPW run not funded by ESA**
 - **Open to any worldwide design**

Definitions (2)

- **NRE is split in 2 parts**
 - **MPW Foundry NRE**
 - silicon costs (data collection, reticules and silicon batch manufacture)
 - **Atmel NRE**
 - remaining ASIC development costs (all Technical Centre, Wafer Probe, Assembly and Test of 5 prototypes)



Orders and Invoices

- **Order for feasibility**
 - 10% of Atmel NRE as in the Preliminary Quotation (*)
 - Invoiced at DSR
- **Atmel NRE Order**
 - 30% - (*) of the Atmel NRE as in the Firm Quotation invoiced at order entry
 - 40% invoiced at Logic Review
 - 20% invoiced at Design Review
 - 10% invoiced at Prototypes delivery
- **MPW Foundry NRE Order**
 - Order placed at the same time as Atmel NRE order for non ESA customers
 - 100% invoiced at LR Closing Date
 - Not refundable

Cancellation charges

- **Standard rules for Atmel NRE**
 - Any already billed NRE items are non refundable
 - The next scheduled payment milestone will be invoiced
- **MPW Foundry NRE is not refundable**
 - If the customer misses the run and wants to embark on the next one, he will have to pay for the MPW Foundry NRE of the next run
 - If the customer stops the design after the LR Closing Date, this amount will not be refunded
 - ESA will penalize ESA customers with 100% of the MPW Foundry NRE in case of withdraw or failure to meet the DR Closing Date after LR Closing Date



Die Sizes and packages

- **M1 ATC18RHA95_216 1Mgates 38mm²**
 - **M2 ATC18RHA95_324 2.2Mgates 77mm²**
 - **M3 ATC18RHA95_404 3.5Mgates 114mm²**
 - **M4 ATC18RHA95_504 5.5Mgates 170mm²**
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- **MQFPF - 160, 196, 256, 352 pins**
 - **MCGA - 349, 472, 625 pins**
 - **Refer to preferred package list for package/die combination**

- **ATMEL NRE costs**
 - Are based on the first level and advanced feasibility study results
 - Are design dependent, therefore known to the customer at the preliminary and firm quotations

- **MPW Foundry NRE costs**
 - For ESA SMPW runs, they are fixed to 937 EUR per mm²
 - ATC18RHA95_216 35.6KEUR
 - ATC18RHA95_324 72.2KEUR
 - ATC18RHA95_404 106.9KEUR
 - ATC18RHA95_504 159.4KEUR
 - For Atmel SMPW runs, they will be higher, yet TBD

- **Foundry for Mono project wafer ~ 500KEUR**

- **ASIC development cycle time is design dependent, however**
 - LR must be held prior to LR Closing Date
 - DR must be held prior to DR Closing Date
 - 4 months between LRCD and DRCD

- **Prototypes**
 - 16 to 20 weeks from DR Closing Date

- **QML-Q**
 - 24 weeks from AGR

- **QML-V**
 - 30 weeks from AGR



Preliminary SMPW run dates

SMPW run number	ESA or Atmel run	Logic review Closing Date (LRCD)	Design Review Closing Date (DRCD)	Available area
E1	ESA	Mar 2005	Jul 2005	100%
E2	ESA	Aug 2005	Dec 2005	100%
E3	ESA	Apr 2006	Jun 2006	100%
E4	ESA	Aug 2006	Dec 2006	100%

- **SMPW Weaknesses**

- **Cycle times**
- **Fix dates**
- **Risk of cancellation if not enough candidates**
- **Confidentiality**

- **SMPW Advantages**

- **Access to advanced technology at lower price**
- **Prototyping for R & D without FM**
- **Commitment to Space requirements (Radiation and High reliability)**
- **Prototypes and Flight Models delivery**