

## MIXED-SIGNAL/RF SUBCOMMITTEE MINUTES PCM/PROCESS CHECKLIST WORKING GROUP

**Date:** November 5, 2007

**Location:** Conference Call

**Time:** 10:00am (PST)

### Attendees:

- Robb Johnson - Inphi Corp.
- Chelsea Boone – FSA
- David Schwan - Sirenza
- Aniruddha Joshi - Skyworks Solutions, Inc.
- Philippe Jansen – IMEC
- Steffen Richter - X-FAB

### Summary:

- Discussed version 0.4 of the MS/RF Process Checklist.

### Discussion/Action Items:

- In section "Process Attributes"
  - If "Analog Thick Metal" is yes, document thickness in Note section (footnote to be added)
  - Add line for: Flip Chip or Bumping available with sub question: What material is used for Bumping?
  - As sub question of Analog Thick Metal: Is a thicker Dielectric available between Top Metal and Top Metal - 1?
  - Add footnote for well options:
    - 2 = Twin Well - N-Well/P-Well
    - 3 = Triple Well - N-Well/P-Well/Deep N-Well
  - Add line for: Is interconnect Planar or Non Planar?
  - Add line for: Final Passivation Dielectric Type?
  - Add line for: How many VDD breakdown voltages are supported?
  - Add line for: Are Multi Vt transistors supported?
  - As sub question for "VDD Core"
    - What is the overdrive voltage limit?
- In section "Passive Device Attributes"
  - Add line for: What is Tuning Range (in volts) of Varactor?
  - Add line for: What varactor types are available (MOS, junction, hyper-abrupt)?
  - Add column for passives indicating number of mask added for device.
  - Add leakage specification for capacitors.
  - Add breakdown voltages for capacitors.
  - Add leakage for diode at nominal voltage.
  - Add On Resistance to diode.
- In section "Turn Around Time"
  - Change name from "Turn Around Time" to "Foundry Logistics"
  - Add line for: Wafer Size
  - Add line for: Which fabs are supported?
  - Add line for: Minimum Lot Size

- Add line for: Internal or External Mask Vendor  
with sub question: Which Mask Vendor for External Vendor
- In section "Active Device Attributes"
  - Add note describing which lines need to be duplicated to describe different speed versions of NPN's, and to describe PNP's.
  - For MOS devices, add  $I_{dsat}$ , and Transconductance
  - For Bipolar devices add Beta.
  - For Bipolar devices add Early Voltage.
- Items tabled for future consideration:
  - Fab turnaround time
  - Mask Making turnaround time

**Next Meeting for PCM/Process Checklist Working Group:**

- December 4, 2007 at 10:00am (PST) on teleconference.