SIGN UP TO

- Email Newsletters
- RSS Feeds
- Digital Magazine
- Print Magazine
- Technical Papers
- Events
- Media Centre

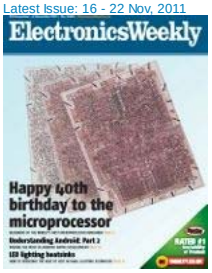
WORK BREAK

- Photo Stories
- Blogs
- Video
- Sudoku
- Dilbert
- Gadget Master
- Made By Monkeys

Sign-up for newsletters:

Read The Magazine

Latest Issue: 16 - 22 Nov, 2011



ARM and TSMC moving fast to 20nm

David Manners
Friday 18 November 2011 15:11

ARM and TSMC are moving fast to get Cortex A-15 out on a 20nm process. A chip has already been taped out and an ARM process team has been set up in Taiwan to handle the transition.

“The 20nm tape-out is a test vehicle,” ARM’s executive vp for marketing, Lance Howarth, tells EW, “the expectation is that we’re a year away from 20nm as a production technology.”

The rationale for the tape-out is that: “We need to have proven IP and to prove the design flows, to verify the RTL and make sure it all works well on 20nm,” says Howarth, “because the interdependencies between process technology and the IP are increasing all the time.”

“We’ve tied that in with opening a small design centre in Taiwan’s Hsinchu Science Park,” adds Howarth, “we’re putting in expertise in terms of physical IP from our PIPD division, process guys and graphics guys looking at the deployment of our IP on advanced processes. Initially we’ll have eight guys rising to 12.”

In an age when some process transitions don’t deliver much in terms of increased performance due to higher leakage, TSMC’s 20nm process is expected to deliver some surprisingly significant gains.

Maria Marced, President of TSMC Europe says: “Compared to 28nm the 20nm process is expected to deliver a 25% improvement in power consumption, a 15-20% improvement in performance and a 1.9x increase in density. The plan is to introduce the first version of 20nm in the second half of 2012.”

Howarth is impressed by TSMC’s moves on 20nm. “TSMC are quite aggressive in pushing 20nm, they are accelerating 20nm development,” he says, “people think TSMC are responding well in respect to 20nm and don’t think Intel are as advanced in 20nm compared to TSMC. Their vision is that finfet comes in at 20nm (at Intel) but the advantage of finfet will be marginal.”

Asked if ARM might consider fully depleted SOI (FDSOI) as an alternative to finfet, Howarth responds: “We have a team in Grenoble specifically looking at SOI and have been for some time. The jury is still out on the mass adoption of SOI.”

Earlier this week, at the European Nanoelectronics Forum in Dublin, a report on the EU’s Catrene SOI development project involving AMD, GloFo, ST, Soitec, Siltronic and others stated that, at 20nm, finfet and fully depleted SOI are on a par.

Delivering the report, ST’s Gilles Thomas said: "Don’t panic, the transistor architecture on finfet and FDSOI are the same but for a rotation of 90º. "

For the time being, ARM’s focus is on getting out Cortex A-15 on 28/32nm processes.

“We expect A-15 to be sampling in the first half of next year, to be in full production in Q4 2012, and to be out in hand-sets by the end of next year,” says Howarth.

Share the content

ShareThis

Most Viewed

- MulticoreWare works with AMD on OpenCL multicore tools
  Posted: 11:28 21 Nov 2011
- Electronics Weekly's guide to LED heatsinking
  Posted: 00:46 23 Nov 2011
- Production line for tiny OLED video displays ready to roll in France
  Posted: 15:18 22 Nov 2011
- Let's not talk ourselves into a crisis - McAneny
  Posted: 00:11 22 Nov 2011
- ARM and TSMC moving fast to 20nm
  Posted: 15:11 18 Nov 2011

Products

SUPPLIER ECOSYSTEM

- » MAIN INDEX
- » Acal
- » Anglia
- » Arrow Electronics
- » Avnet Memec
- » Avnet Silica
- » Digi Key
- » EBV Elektronik
- » Farnell
- » Future
- » Mouser
- » MSC Gleichmann UK
- » RS