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## Intel's Rockchip to China

*Intel and Rockchip have announced a strategic partnership making Intel's x86 architecture chips and 3G modems (based on SoFIA) available to the mass Chinese market for lower end tablets (and potentially smartphones). This is a win-win strategy, giving Intel a massively expanded sphere to sell chips to (via Rockchip) in the explosively growing low end tablet market. And Rockchip gets to leverage Intel's extensive IP.*

The low end of the tablet market in the Far East, primarily Android based, is expected to grow explosively over the next 2-3 years as the many home grown Chinese vendors offer devices in the \$79-\$149 range. Although primarily for local consumption, many will make their way to other developing countries, particularly those in close proximity to China, although we expect local vendors to emerge in India and other similar high potential markets. The ODM/OEMs serving this market have primarily looked at local component suppliers, and in particular local chip suppliers, to provide for their needs as the higher end chip suppliers for tablets (e.g., Qualcomm, NVidia, Intel) can't meet the low margin price points necessary. Rockchip, for one, has excelled in exploiting this marketplace as a leading provider to the local mobile (tablet and smartphone) market. It has numerous design wins and is expanding its portfolio. It has direct relationships with most of the local manufacturers, and as a fabless chip supplier has the ability to rapidly change and conform to local market needs.

Intel and its x86 architecture have been locked out of this market due primarily to high price points, although its modem chips have been deployed in a few designs. But working with Rockchip, who has expertise and connections in local markets, Intel is looking to rewrite the rules and create a market for its fully integrated System on a Chip (SoFIA) solution, based on its Atom architecture and 3G/4G Infineon modem designs. This arrangement provides Intel the ability to compete as a chip supplier for the plethora of lower end tablets coming to market with near zero margins and an undifferentiated Android OS. Intel, with Rockchip's help will design and build custom SoCs that they will co-sell (Rockchip through its vendor relationships, and Intel through its own).

This strategic alignment clearly benefits both parties. It gives Intel a better ability to compete against the ARM ecosystem which to date has been dominant in tablets (although Intel has been making some headway at the high end of the tablet market). And it gives Rockchip a huge competitive advantage against its many rivals in the fabless semiconductor space who don't have the ability to leverage the massive amounts of strategic IP available from Intel. Initial designs will utilize Intel's 3G modems (2H 2014), but that is not a problem in a market where lower cost

outweighs the need for absolute fastest speed. Newer designs (1H 2015) will include Intel's 4G/LTE designs.

For its part, Rockchip will work with Intel to design “locally relevant parts” that reflect the needs of local manufacturers. Its ability to build reference designs and work to customize product for specific vendors will create an ability for Intel's architecture to have an impact, especially with Intel's work on optimizing Android for its chips and Rockchip's work on optimizing Android for the Chinese market. At some point in the future, this also gives Rockchip the potential to use Intel's foundry services for customized designs (which also benefits Intel by filling its fabs). And although Rockchip is primarily seen as a low end supplier, it has wider ambitions. This agreement gives Rockchip the ability to move upstream and no longer be seen as strictly a low end, selling on price vendor. There will be a local market for mid to high end tablets and Rockchip wants to be able to supply those needs.

This strategic alignment has the potential to dramatically change the ability for x86 based chips to make their way into lower end tablets – a market x86 is largely locked out of today. Further, it allows Intel to build chips in greater volumes (albeit at potentially reduced margins), and thus keep its fabs full so as to recoup its huge investment in chip manufacturing technology. And it provide a way for Rockchip to move beyond its initial niche of lower end ARM chip supplier to the masses, and provides a way for it to differentiate and move “up the stack” to compete with the NVidias and Qualcomms. What isn't yet clear is if this relationship will work well for both parties, and whether Intel can truly compete on price at the low end of the market, or whether Rockchip can make the mid to higher tier market attractive enough for Intel to stay engaged. But this relationship does show that Intel is willing to explore all strategic advantages in an ever evolving marketplace. It faces competitive pressures it hadn't faced in the non-mobile aligned world where PC sales no longer constitute the majority of the market, particularly in emerging markets where mobile outsells the more traditional PC by 10 to 20 times. We expect this relationship to have a significant market impact, but whether its enough to keep Intel engaged will take 2-3 years to play out.

***Commentary written by Jack Gold, Principal Analyst.  
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