# FutureHorizons

## **FH MONDAY**

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### Tata, Dell Build 45m Vertical Solar Farm

Tata Power Solar and Dell International Services India Pvt Ltd have together built a 120kW vertical solar farm on Dell's Bengaluru campus. The 45m structure, believed to be the largest vertical solar farm in India, provides the campus with sustainable green energy as well as insulation for the building.

The south facing vertical solar farm was a very complex project as it needed to be integrated on the façade of the building without compromising on the aesthetics. The project is a foray for Tata Power Solar into vertical solar structures, which have the potential to transform urban energy management, utilising a fraction of the real estate, which is at a premium in cities.

#### Apple Turns Up Speakers, AR

SAN JOSE, Calif. – Apple announced a \$349, Siri-powered speaker, leveraging its expertise in music against rivals Amazon and Google. It also rolled out developer's kits for augmented reality and machine learning on iOS 11 and upgraded its Macintosh and iPad computers.

The HomePod is a 6.8-inch speaker driven by an Apple A8 SoC to handle echo cancellation and optimize sound for a given space. It packs a four-inch woofer and an array of seven tweeters, each with its own driver to deliver better sound than smart speakers such as Alexa and Google Home.

"This is really going after Sonos and Bose home speakers--the audio is superior to Sonos--music is in Apple's DNA," said Tim Bajarin, president of market watcher Creative Strategies (Campbell, Calif.). "It's not designed like Amazon's Alexa as a front end to online stores...my gut says they will sell millions of these as a powerful home speaker," he added.

#### Sony Embeds DRAM In Image Sensors

At the ISSCC conference, Sony circulated a press release describing the "Industry's first 3-layer stacked CMOS image sensor with DRAM for smartphones". There have been rumours of image sensors with embedded DRAM (to speed up the image data processing) for several years, but so far, nothing has been put into production and out in the real world.

The details were given in a paper at the ISSCC conference and it actually looked like the real thing, so this definitely caught the attention of our image-sensor experts inside TechInsights. Confirming its production status, at Mobile World Congress, Sony announced their Xperia XZ Premium and XZs phones, with the Motion Eye camera system capable of 960 fps. We got hold of an Xperia XZs as soon as it was available, cross-sectioned the rear-facing camera chip, and lo and behold, we indeed have a three-stack; the CMOS image sensor (CIS) is mounted face-to-back on the DRAM, which is face-to-face with the image signal processor (ISP).

### Plucky Kent-Based Audio Technology Expert Takes On The Asian Giants... And Wins!

From its spectacular riverside base in a quaint Kent village, leading home audio specialist Chord Electronics is taking on the giants of the technology world and winning. The company, which hand-builds its critically acclaimed consumer audio products from a converted Victorian pump house on the River Medway, has seen demand in Asia for its classleading consumer audio technology, surge.

Chord Electronics owns a number of proprietary technologies for audio and as a result, its product line, which includes hi-fi amplifiers, digital music streamers and digital headphone amps for smartphones, is unrivaled both sonically and technically. Consequently, Chord's exclusively British-designed and manufactured products are increasingly exported overseas, including to those parts of the world traditionally associated with consumer electronics manufacturing dominance.

#### AMD Seeks Growth In Diversity

At its Financial Analyst Day, AMD presented their long-term growth strategy, focusing on delivering products and technologies for the PC, immersive device, and datacentre markets. These markets are estimated to be worth ₹3.88 lakh crore (\$60 billion) combined.

"Our long-term technology roadmaps position AMD to take advantage of the major shifts in the technology industry and deliver significant financial returns," said AMD President and CEO Dr. Lisa Su, in a press release. "We are entering the next phase of our growth strategy through ramping our phenomenal new products across a diverse set of markets."

AMD has launched the EPYC, ushering in a new era for high-performance server processors and the datacentre. With its high core count, memory bandwidth, and support for high-speed input/output (I/O) channels in a single chip, EPYC aims to revolutionise the dual-socket server market while simultaneously reshaping expectations for single-socket servers. Previously codenamed "Naples", this new family of high-performance processors for cloud-based and traditional on-premise datacentres will deliver the Zen x86 processing engine scaling up to 32 physical cores.