

## Can GaN deliver fast charging and efficiency safely?



Rory Dear, European Editor/Technical Contributor

There's been endless speculation and a fair bit of skepticism around the viability of gallium nitride (GaN) derived power devices, but Dialog Semiconductor believes it's cracked it. GaN-based power devices promise high efficiency combined with high breakdown voltages, low on-state resistances, and fast switching properties simultaneously. In layman's terms, this better facilitates the fast charging capabilities today's consumers demand and may finally signal the end to the huge external power bricks we all must transport alongside our near paper-thin laptops. The end-game is combining... [Continued...](#)

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## electronica: RS Component's answer to the FAE

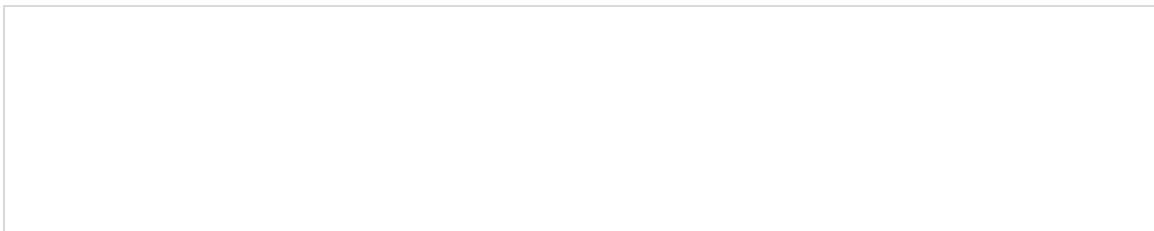


Rory Dear, European Editor/Technical Contributor

The limitations RS Components perceives with a typical field application engineer (FAE) aren't personal; an FAE's role demands servicing an almost untenably large number of clients and thus, they have to split resources thinly between them. To the vendor, this methodology means a high cost per touch, so it's not the best strategy for them either. FAEs also often have a single line card of expertise, meaning they aren't able to discuss the wider design implications of other manufacturers components within the same design.... [Continued...](#)



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## How to build a PCIe/104 system



Rory Dear, European Editor/Technical Contributor

In 2008 the ever prominent PC/104 Consortium injected fresh life into their long established PC/104 stackable format; foreseeing the industry decline in PCI bus derived peripheral components in favour of the 'new kid on the block' PCI Express - enter the PCIe/104 . Unlike its predecessors, ISA and PCI, PCI Express is actually not a bus in the traditional sense, but a collection of links from a single host to a single device. As we're not comparing 'spades with spades', some background terminology must... [Continued...](#)



## electronica: Geofencing and wellness tracking with the NanoTracker



Rory Dear, European Editor/Technical Contributor

Claiming the world's smallest GPS and GPRS tracking device (which now supports 3G), Frankfurt-based company Round Solutions is adamant they provide "a better solution in the Global M2M market. We still work against that vision by continuously moving the goal posts further," according to founder Ben Hoelke. The NanoTracker is a wearable personal tracking device with built-in 350 mAH battery for up to four days continuous operation. Vaunted as an off-the-shelf solution to the plethora of new IoT wearable applications the consumer is currently... [Continued...](#)



## Avoiding resource drain from antivirus software



Rory Dear, European Editor/Technical Contributor

The modus operandi of enterprise antivirus solutions involves watching with an eagle eye in the background, scrutinizing every link you click and file you open. This approach satisfies the demands placed on the operating system (OS) due to the inherently unpredictable behavior of your typical desktop or laptop user, but this constant watching comes at a price to you (in the form of a monthly subscription) and to system resources. With processors that eclipse those of yesteryear, the resource drain is proportionally irrelevant these... [Continued...](#)

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## “Snappy” gateway application development with Ubuntu Core



Thibaut Rouffineau, Canonical Ltd.

Many of you have used Ubuntu at some point in your life, maybe to revive an old laptop that could not cope with the latest Windows update, or on your development machine, or, quite likely, if you've logged into a backend server. Lately, however, you might have heard of a new Ubuntu called Ubuntu Core (sometimes referred to as Snappy), and wondered what it is all about. What is Ubuntu Core? At first glance, Ubuntu Core seems to bear little resemblance to Ubuntu. The... [Continued...](#)

## electronica: Microsemi's answer to dwindling storage



Rory Dear, European Editor/Technical Contributor

The digital universe is already huge, and growing exponentially. Occupying some 4.4 ZB in 2013, predictions state that will increase by a factor of ten by 2020, to an almost inconceivable 44 ZB. With so much data being generated, accelerating at a near untenable rate and fueled by IoT and its sub-derivatives, where do we store it all? And it's not just our own data gathering increases we need to worry about. By 2017, emerging markets will overtake what we consider mature markets in... [Continued...](#)



## electronica: XP Power reduces AC/DC supply footprint by 44 percent



Rory Dear, European Editor/Technical Contributor

A constant driven exists to further shrink the standard 2" x 4" open frame AC/DC power supply, fueled by market demands to create ever more compact products. Naturally, as dimensions decrease, the challenges of thermal management increase. Today's applications demand passive cooling in that ever-tighter space. With the new ECF40 series of single output, open frame power supplies, XP Power have reduced that 2" x 4" footprint to a mere 1.5" x 3". This means a footprint 44 percent smaller than the standard, and... [Continued...](#)



## Will haptic feedback spell the end for mechanical HMIs?



Rory Dear, European Editor/Technical Contributor

Technology evolves rapidly, but changing the way we interact with technology is relatively glacial. The mechanical button and dial have reigned supreme for decades and while the

advent of touchscreens revolutionized the human-machine interfaces (HMIs), it seems no one is ready to say goodbye to our mechanical friends. To inspire a willingness to deviate from our comfort zone, a new technology must bring clear benefits inaccessible to existing methods. Haptic feedback does so. The technology employs an ultrasonic speaker array. Ultrahaptics is driving this... [Continued...](#)

## Smart home hindered by ease of configuration, cost



Rory Dear, European Editor/Technical Contributor

Back in the '90s, before online gaming involved centralized servers, connectivity was either locally via LAN or the untamable beast that was a direct cable connection. This involved dial up modems connecting directly to one another over phone lines. I vividly recall running nearly a mile back and forth from my old school friend's house desperately configuring it. It worked for a few minutes, then lost connection – an experience us proud early adopters almost accept as par for the course with (what was)... [Continued...](#)

## Microsoft returns to non-IoT embedded with Windows 10



Rory Dear, European Editor/Technical Contributor

Back in March I wrote a pretty scathing piece asking, Has Microsoft forgotten about embedded? Six months later, they've remembered – and I hope I played some role in jogging their memory! My original piece unashamedly bordered on a rant, as the voice of so many left scratching their heads, asking where their XP Embedded and WES7/8 upgrade path went, exactly. Windows 10 IoT Core, as the name suggests, is really for the new embedded of highly integrated (invariably ARM derived) SoCs. So the... [Continued...](#)

## Speedy backup cameras are on the way



Rory Dear, European Editor/Technical Contributor

We've all heard the horrific and tragic story of young Cameron Gulbransen, accidentally and fatally knocked down by this father whilst reversing out of his drive way, back in 2002. His father plead to Congress to legislate preventative action using what was back then already readily available technology and they did. The final chapter in this story is that by 2018, all new vehicles sold in the U.S. must have rear camera display system compliance. The automotive market has long been implementing the technology... [Continued...](#)

## Electronification of the world, one wearable at a time



David Marrakchi, Altium

As the world of manufacturing shifts into the eras of Industry 4.0, IoT, and Big Data, companies must embrace software platforms to remain competitive. This process has never been more challenging when you factor in other competing goals including reducing time to market, increasing quality and efficiency, and optimizing your entire value chain – and yet,

manufacturing and mechanically focused companies are shifting their focus to high-tech and becoming electrified. Nike is a perfect example, having recently extended its footprint into the high-tech world... [Continued...](#)

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Thank you for reading this issue of the *Embedded Europe E-newsletter*,

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