

Newsletter Issue 1 Quarter 4 2005

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Digital Power Electronics - switchmode controllers

It seems that digital switchmode controllers are almost here (See Emerging Markets in Digital Power Electronics: Component, Converter and System Level Opportunities at market research company www.darnell.com). That said, they have been almost here for ten years. As **ELMG** connects the outputs of microprocessors, DSPs and microcontrollers directly to gate drive signals it is no surprise to us that perhaps eventually switchmode controllers will be all digital. If you are considering going digital in your power electronic control the biggest mind shift required is the realization that the gate signals are digital signals and there is no need for any analogue modulator. It then becomes clear that the power converter itself is the digital to analogue converter and all you need is an analogue to digital converter to measure the output. By using a sigma delta analogue to digital converter it is possible to have a one bit control system where the one bit output is the gate drive and the one bit in is the sigma delta data stream. One bit processing is common with digital audio and may well become the standard in digital power. **ELMG** digital power electronics expertise is outlined at www.elmgz.com/power-electronics.html.

Contact **ELMG** at info@elmgz.com to talk with us about your digital power electronic requirements.

"A room without a book is like a body without a soul." Gilbert Keith Chesterton

"A software engineer with a note book is a rarity. If a software engineer does have a note book then they used to be a hardware engineer." Anon

How many of your company's software engineers use note books to record their work? Does your company require that they have one? Does the company require that they use the book as part of reviews and walkthroughs? Ever noticed that hardware engineers have note books but software engineers don't?

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Typically software engineering teams are more productive if some sort of recording of work progress is encouraged.

Where was your software and business data when the levy broke in New Orleans?

Recently we all watched as New Orleans flooded. As one who enjoys jazz and Hurricanes (the drinks, not the storms) in The Big Easy it was sad to see this city underwater. No doubt the people of New Orleans will have the place back to its best and it will be great to visit when it is fixed up. We send our best wishes to all the people of the Gulf Coast who lost friends, family or property in the recent storms.

On a less somber note how many of your companies take care of where your software backups are? No doubt you all have systems that make regular backup copies of your critical data. If you don't then get a system set up as soon as you can. Let us assume that your backups get done over night and they are then picked up in the morning by a delivery guy who takes them to XYZ storage.

Now the key questions to ask after 'Is the backup drive working?' are 'How does this backup survive when the levy breaks?', 'Is the physical media safe from floods, hurricanes and fire?' and 'Have you ever been to see where the data is kept?'. This can be eye opening and is well worth doing. Now at this stage some of you are saying "Our backups are in my office". This is better than having no backups but if the key risk of data loss is fire then it doesn't help much in re-establishing the business if the place burns down. A solution to consider is backing up over the internet to an external repository run by a data backup company – a Backups-R-Us. Basically they store your backups on a redundant array of disks in an air conditioned room in a fire controlled building and sometimes the data is duplicated on another server in a similar building in another city. Perhaps it isn't for your company if your data is too sensitive and could be intercepted during the process. That said typically the backups are mirrored copies of the files so if nothing is changing then nothing gets transmitted which lowers this interception risk. Also encryption is available. The alternative delivery guy solution in fact presents similar risks.

Is off site networked backup right for you? - If you have no off site back up it can be a fast, low cost way to add a level of redundancy that your company may not be able to justify doing yourself.

From the ELMG FAQ page

www.elmgz.com/faq.html

Q: What is the best advice for a company considering or moving toward getting product designed, tested and marked for CE, UL or any other mark?

A: The most surprising thing about the process is that it creates a structural organisational change and power shift in the organisation. Typically design engineers feel threatened by it as they now must somehow obey new rules enforced by an external third party. Research and development managers are put under pressure to reduce the number of development cycles as each cycle requires re-testing. Executives will feel that some of the flexibility in the way the company operates is gone. In terms of advice for achieving good results:

- 1.** Understand why your company needs to do this. This is typically a market requirement. Clarify this as much as possible and get everyone to buy in.
- 2.** Get some external help. There are HR reasons for this along with technical ones. Examples include external people being more effective in introducing new concepts and having some one to use as an authority figure.
- 3.** Make a plan.

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4. Assess where it impacts in your business. Change control is a typical area but there are others also.
5. Get ready for people to react negatively and have a management plan to deal with this.
6. Recognize what it will cost.
7. Get some external help and use it appropriately.

Contact **ELMG** now at info@elmgnz.com for help with international multi market compliance.

See more FAQs at www.elmgnz.com/faq.html

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