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Top ten considerations when choosing memory

~ Nexus GB has produced a list of considerations for OEMs who are integrating portable memory into a product ~

Nexus GB, the exclusive UK distributor of Datakey Electronics' range of rugged portable memory products, has produced a checklist of issues that OEMs should consider before integrating portable memory into a new design. The list is intended to help design engineers avoid the, often costly, mistakes that can go hand in hand with integrating consumer style memory products, such as USBs and SD, SDHC or XD camera cards.

When an OEM product requires the use of a portable memory device, design engineers and product marketing staff often consider consumer memory solutions like USB flash drives and SD (Secure Digital) memory cards. This is not surprising, as these devices have become an integral part of daily life. However, before integrating a consumer memory device into an embedded system, engineers must be aware of the potential pitfalls that these consumer focused products can have. Below are the top ten factors that OEMs must consider:

1. **Look for memory that is guaranteed to work in the OEM device –** While consumer memory may fit physically, it may not work in the

device – for any one of countless technical reasons. As a result, the design engineer using consumer memory should pre-qualify those products on the market that do work. This eliminates perhaps the most compelling reason to use consumer memory - widespread availability.

2. **Look for longevity in the product life cycle –** Consumer memory becomes obsolete when the manufacturer ceases production. The right industrial memory product is guaranteed to offer substantially better longevity because industrial manufacturers understand that your product may need continual maintenance over a long period.
3. **Always choose a controlled connector so that only approved products fit –** If you design in USBs or camera cards, users can plug in untested, unqualified consumer memory. This isn't the case with a specialist memory key or token.
4. **Choose the right amount of memory –** If your application only requires 4MB of memory, there is no need to buy a device that provides 32GB. As with all design engineering projects, over specification can be expensive.
5. **Do your products operate in a harsh environment?** Both the memory device and the mating receptacle may need to be immersion rated, produced for a specific temperature, shock rating or ESD (Electro Static Discharge) rating.
6. **Triple check the mated cycle life –** If your product is used ten times a day, a typical USB connector will only last five months. This may be great for the spare parts business but it will leave your end users pretty

unhappy! Always ensure that the usable life cycle of the product matches its predicted usage.

7. **Check the product support for industrial OEMS -** Consumer memory manufacturers focus on consumer OEMs and industrial memory manufacturers on industrial work, so it's vital that you match your own organisation to the manufacturer correctly.
8. **Use form factor to discourage theft -** USB drives and SD cards are targets for misuse and theft but a stock design from a specialist portable memory supplier isn't. If there is the possibility of product or data theft in your application, this should be a key consideration.
9. **Use form factor to improve data security -** By design, most industrial products do not plug into standard PC ports, whilst USBs and memory cards are made for this purpose. It may well be beneficial to your security strategy if lost products can't be accessed without specialist equipment.
10. **Watch out for changing standards -** USB and SD 'standards' can and do change. Indeed, history shows that these standards are driven by the consumer market and changes can adversely affect embedded OEMs who adopt the products. For instance SDHC cards use a different addressing method to SD cards, meaning embedded devices using SD can't also use its successor, even though they fit in the receptacle.

Michael Barrett, operations director of Nexus GB, explains, "Many of the Datakey products we supply have been available, unchanged for over 15

years, some for over 20 years, and they are still available today. As a result, OEMs don't need to waste valuable engineering time re-qualifying new memory devices or re-designing their system due to obsolescence. Also, because of our products' unique physical interface, unqualified consumer memory devices cannot be used because they don't physically fit.

“We are constantly approached by designers who have fallen foul of the temptation to use consumer memory in their devices. Hopefully, our ten point guide will help some of these people before they make their mistakes. After all, while we are delighted to help those that do come to us in retrospect, we would rather they be able to save capital by choosing the right product in the first instance,” concludes Barrett.

Ends: 803 words

Editor’s note: If you want to stay constantly up to date on the latest news from Nexus GB, paste the following link into your RSS reader http://nexus-pr.blogspot.com/atom.xml. If you don’t have an RSS reader, I can recommend the following free package Sharp Reader.

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About Nexus GB: Established in 1986 Nexus GB is Datakey Electronics' UK and Ireland exclusive distributor for portable, rugged keys and tokens containing non-volatile memory. These reliable and re-programmable items provide data transport, security, and access control solutions even in extreme environments where other methods, such as USB memory, would not survive. Furthermore, distinct from consumer-like memory solutions, they are a well established product that will not become obsolete as technology progresses. As a result, they are commonly used by design engineers working on long term projects, with more than three million units currently in UK service.

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