



QUICK GUIDE

Fixed BOM and non-Fixed BOM solutions

What does BOM stand for?

Bill of Materials.

What's a Bill of Materials?

Every memory product that is manufactured has a bill of materials, a list of everything that is needed to build the product. This will include:

- Hardware elements such as controllers, connectors, flash memory chips and capacitors, all of which will have an original manufacturer's part number.
- Software elements such as firmware, which typically have a version or software release number.

What is the significance of a BOM?

Every manufacturer of SD cards or USB flash drives uses a Fixed BOM, meaning every combination of components, hardware and software, have been tested and approved for manufacture.

Different BOMs will undoubtedly give different performance outputs, for example, a Micron flash chip will have different properties and performance to a Toshiba flash chip.

These 'differences' may be minor and have no impact on the performance or reliability of the finished product, but a customer can eliminate any risk by choosing a Fixed BOM solution that they have tested, qualified and approved.

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What is a Fixed BOM solution?

With a Fixed BOM solution, the critical components that make up the product (e.g. the controller, flash memory chip) are locked down. These components are critical to the performance of the product and will have been rigorously tested prior to being approved.

What are the benefits of a Fixed BOM solution?

Reasons for favouring a Fixed BOM solution include:

- Being able to better control and manage procurement and manufacturing costs, including waste.
- Needing to guarantee the performance of products produced.
- Continuity – when a product’s performance has been tested and approved by an end customer and a benchmark set.

What is a non-Fixed BOM solution?

A non-Fixed BOM solution allows a manufacturer to use a different BOM to fulfil an order, but:

- It does not mean that the manufacturer is using inferior components or making shortcuts in their manufacturing process.
- It does not mean that the manufacturer has ‘taken something out’ or ‘put something in’.
- It does not mean that the product will perform worse (it could perform better) than a Fixed BOM solution, as in some cases they could use the same components

What are the benefits of a non-Fixed BOM solution?

A non-Fixed BOM solution does have advantages:

- Manufacturers can improve the product e.g. firmware updates to remove bugs or improve wear-leveiling, use the latest flash chip that is mass produced.
- Pricing can be more competitive as parts do not need to be stored long term, so the manufacturer can optimise their procurement and use inventory that it has already procured.
- Minimum performance parameters can be set because ‘any BOM’ will perform at a reasonable level e.g. commitments to minimum read/write speeds.

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How do I decide if I need Fixed BOM or non-Fixed BOM solution?

There are risks if you are buying blind and do not have a clear understanding of what you expect from a product.

Before any decision is made, a customer needs to consider 'is the decision to buy being determined by your need to deliver a product that has been qualified and approved by your end customer, where certain performance parameters are critical to the customer's application?'

- If yes, then your project requires a Fixed BOM solution and you will be asked to disclose details about the project to facilitate forecasting, allocation of parts and advised of potential Product Change Notices.
- If no, and you are influenced by a commercial decision and/or are happy that the minimum performance meets your requirements, then a non-Fixed BOM solution should suffice.

How can Cardwave help?

Flash memory is a complex subject and can be overwhelming, but not if you collaborate with Cardwave, a leading expert in the sector. With 15 years experience working with top OEMs, our business is understanding your business.

We have strategic partnerships with all the principal flash memory manufacturers, and are perfectly placed to deliver the right solution, at the right price. We ask all the right questions to fully understand your requirements before taking you through a well-established process that culminates in a recommendation.

We only work with manufacturers who we trust, and who have proven quality systems, and therefore have total confidence in the build quality of the products we source.

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