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# MODE4 User Manual

## General Description and Name

MODE4 Bad Block Method. This scheme is similar to the Skip method but with the added feature of having a map table located in block 0.

MODE4 is used on large format NAND devices and writes data in Little Endian format. The other MODE BBMs use Big Endian format.

## Relevant User Options

The following special features on the special features tab apply to this scheme. The default values might work in some cases but please make sure to set the right value according to your system.

Please note only the below special feature items are related to this scheme and ignore any others. If any of below items doesn't exist, please check whether the right version has been installed or contact Data I/O for support by submitting Device Support Request through this address:

<http://www.dataio.com/support/dsr.asp>

Bad Block Handling Type = "MODE4"

Spare area : Please refer to "Description of common NAND special features.pdf". *Normally set as "Enabled" or "Disabled" for this BBM.* [Default 'Disabled']

## Special Notes

The spare area in this scheme can either be programmed with the customer's image file, or it can be ignored. ECC is not an option with this particular scheme. However, the bad block marks are always located in the spare area. (Byte 2048 for x8 devices)

The data file doesn't have to be arranged in any special way for this scheme. The binary that should be placed into the device is all that is needed. However, special care should be taken into account if the spare area option is set to "enabled". In that case, byte 517 of each page (the sixth byte of the spare area in each page) needs to be left at 0xFF. This is because byte 517 is used to identify bad blocks in the device. If you program one of these bytes to something other than 0xFF, there will be no way for anyone to distinguish a factory marked bad block from a block that has had byte 517 programmed by the programmer.

If the spare area is not to be programmed, then the image should not contain any data for the spare area.

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## Revision History

V1.0 June 12, 2009  
Create this spec.

## Appendix

You can get the file “Description of common NAND special features.pdf” from  
<http://ftp.dataio.com/FCNotes/BBM/>

Data I/O