

# Generic MPF NFC ECC & BBT Bad Block Scheme

## General Description and Name

Generic MPF NFC ECC & BBT. This scheme is a Generic Multiple Partition scheme. It uses skip method when bad blocks are found within each partition. It also creates bad block table and stores it in the last good block of the device. It also converts large page (2048 bytes) image data to four small pages (512 bytes each) and adds spare area and ECC into each small page spare area.

## Spare Area

The spare area data will be generated by the programmer and will contain ECC values.

## ECC

The ECC method used and calculated for this scheme is Freescale IMX31 ECC.

## 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>

Please refer to "Description of common NAND special feature.pdf". for more details.

Bad Block Handling Type = "**Generic MPF NFC\_ECC & BBT**"

Spare Area = Normally set as "**IMX31**" for this BBM. [Default 'Disabled']

- The scheme adds data for the spare area that includes ECC values.

Check BB marker in dataFile = "**Disabled**"

- This setting is required since image file contains information that will write over the Bad Block marker area.

Bad block detection = "**BBM then BB marker**"

- The algorithm scans the last four blocks of the device searching for the bad Block table Signature "Bbt0.." within the first pages and will use this table if found. If this bad block table is not found, the standard NAND bad block marker area will be searched and a new table will be created.
- NOTE – When devices that have bad block table previously programmed in them are mixed with "fresh" devices during programming, the fresh devices will be rejected during.

Partition Table File = The path of the partition table file on your PC.

Debug Messages in Eventlog = “On/Off”

- The level of debugging information printed in the eventlog.txt file. “On” is the recommended selection.

All other features are not used for this scheme.

### **User Checksum Implications**

If this scheme, the TaskLink checksum will be different from the device checksum because of the bad block table that contains possible bad blocks list.

### **Image Preparation**

The image data file should NOT include spare area information. It should be the size of the device excluding the spare area information. The unused blocks are padded with “FF”. The image file should include a bad block table signature of “Bbt0..” at offset 0 of the page 0 of the last block. During programming, this signature will be relocated to address 0x200 and the addresses 0 thru 0x1FF will contain the bad block table.

### **Partition file Preparation**

The last partition should include the last block with bad block table signature of “Bbt0..” at offset 0 of the page 0. The last partition needs two blocks at least. Keep the length of last partition as same as the actual blocks number in it.

### **Exceptions**

- If any other bad Block management or skip is used with the devices that are pre-programmed with this BBM, they will fail because of “too many bad blocks” errors. For this reason, any device that is preprogrammed with this BBM should be erased first using this BBM before using with any other BBM.

### **Special Notes**

- To erase a device that is pre-programmed with this BBM, use a proper image file that contains bad block table signature (“Bbt0..”) at the last block, page 0 address. In TaskLink software, enable Erase flag for all the sectors. Disable all the Program flags except the last block.

### **Revision History**

- V 1.0 – 9/8/2009
- V 1.0 – 9/8/2009 Add partition description

### **Appendix**

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