

Generic MPF NFC IMX27 BBT Bad Block Scheme

General Description and Name

Generic MPF NFC IMX27 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 can convert 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 IMX27/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 IMX27 BBT**"

Spare Area = Normally set as "**ECC IMX31 Isn**" for this BBM. Or set "**Enabled**" if ECC exists in the image file. [Default 'Disabled']

- The scheme adds data for the spare area that includes ECC values, if set "**ECC IMX31 Isn**"

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.

Convert large to small page format? = The setting is dependent on the image file format.
[Default ‘No’]

Set “**Yes**” when image file with pages prepared like “2048B+2048B+...”.

Set “**No**” when image file with pages prepared like “512B+16B+512B+16B+...”.

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

If your image does not start from 0 address, please fill out 0 to your starting address with 0xFF (NAND blank). For example, your image starting address at 0x160000, you should prepare a data file filled out 0xFF from 0 to 0x15FFFF, before your actual image.

This BBM (bad block management) can support two page formats image.

Type 1: Every page size should be 2048 Bytes. Excludes spare area. In this case, you should set some special feature differently.

Spare Area = “**ECC IMX31 Isn**”

Convert large to small page format? = “**Yes**”

Type 2: You pre-prepare the proper image format for NFC IMX27. One page format should be like “512B+16B+512B+16B+512B+16B+512B+16B”. Includes spare area. You should set some special feature differently.

Spare Area = “**Enabled**”

Convert large to small page format? = “**No**”

Partition file Preparation

The last four blocks of the device should be reserved to store Bad block tables (BBTs). It also means your partitions shouldn’t contain the four blocks for any other usage.

Special Notes

- If any other BBM 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 not be programmed with other BBM.
- For the similar reason, It is forbidden to mix programmed devices with this BBM and other devices.

Revision History

- **V 1.0 – 08/02/2012**
Creat the draft.
- **V 1.1 – 12/21/2012**
Fixed some description.

Appendix

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