Samsung GBBM2 XSR User Manual

General Description and Name

Samsung GBBM2 XSR. This scheme Implements the Samsung GBBM2 bad block handling type. It uses an extra table for LPIA information. (Please refer to GBBM 2 spec for some abbreviations). This BBM is only for One-Nand 1Kbyte or 2Kbyte device.

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 = “Samsung GBBM2 XSR”

Spare Area = “Enabled” or “Disable”. It depends on the customer image has spare area already or not. ***Set as “ Enable” for this BBM***.

Unlocked area: Start block = “0x?” It depends on the customer in hex.
Set as “ 0x0” for this BBM.

RBA area: Number of blocks = “?” It depends on the customer in dec. Samsung recommends this value = Max number of bad blocks + 3extra block. Take 1024 blocks as an example, it should be 23.
Set as “ 23” for this BBM.

RBA area: Start blocks = “?” It depends on the customer in dec. It equals number of the device blocks – RBA area : Number of blocks.
Set as “ 1001” for this BBM.

UBA area: Start blocks = “?” It depends on the customer in dec. It should be 0 in GBBM2.

Partition Table Format start size = “BLOCKS” OR “BYTES”. It depends on what type of table is used.
Set as “BLOCKS***” for this BBM***.

Partition Table File = “?”. The path of the table file.

User Checksum Implications

If this scheme, or any bad blocking scheme is used, there are implications to the checksum of the image. As with any device, TLWin produces a checksum over the entire image rather than just the user data file.

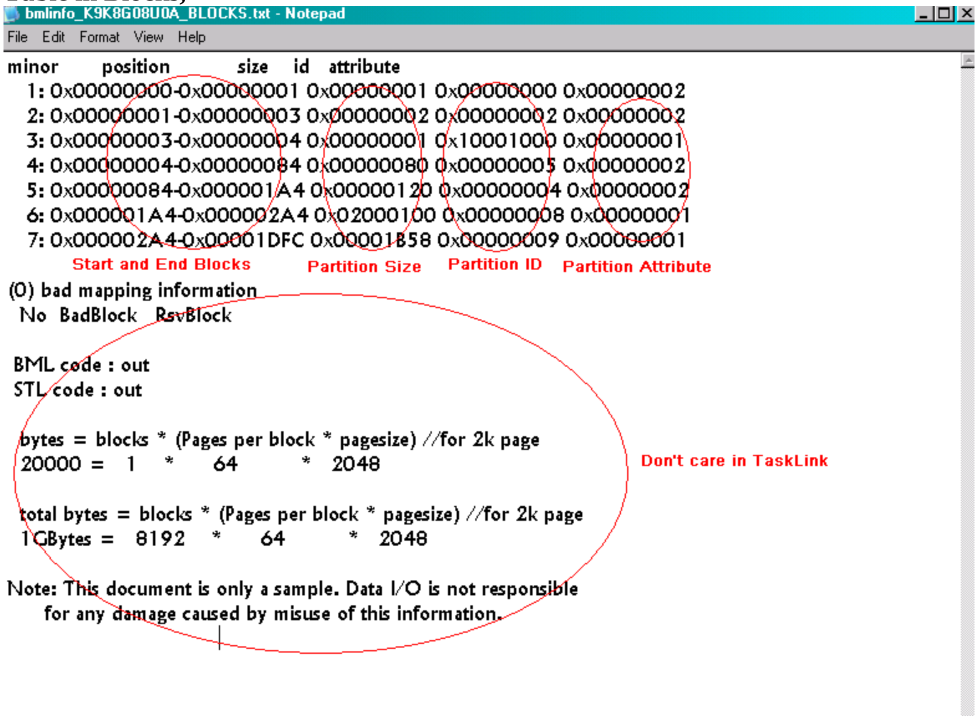
If the chosen spare area option is “enabled”, then the checksum will not be affected. It will be a checksum of the user data plus FFs to the end of the device image.

Image Preparation

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 because the spare area option is set to “enabled”. In that case, bad block mark of each page (the sixth byte of the spare area in each page) needs to be left at 0xFF. 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.

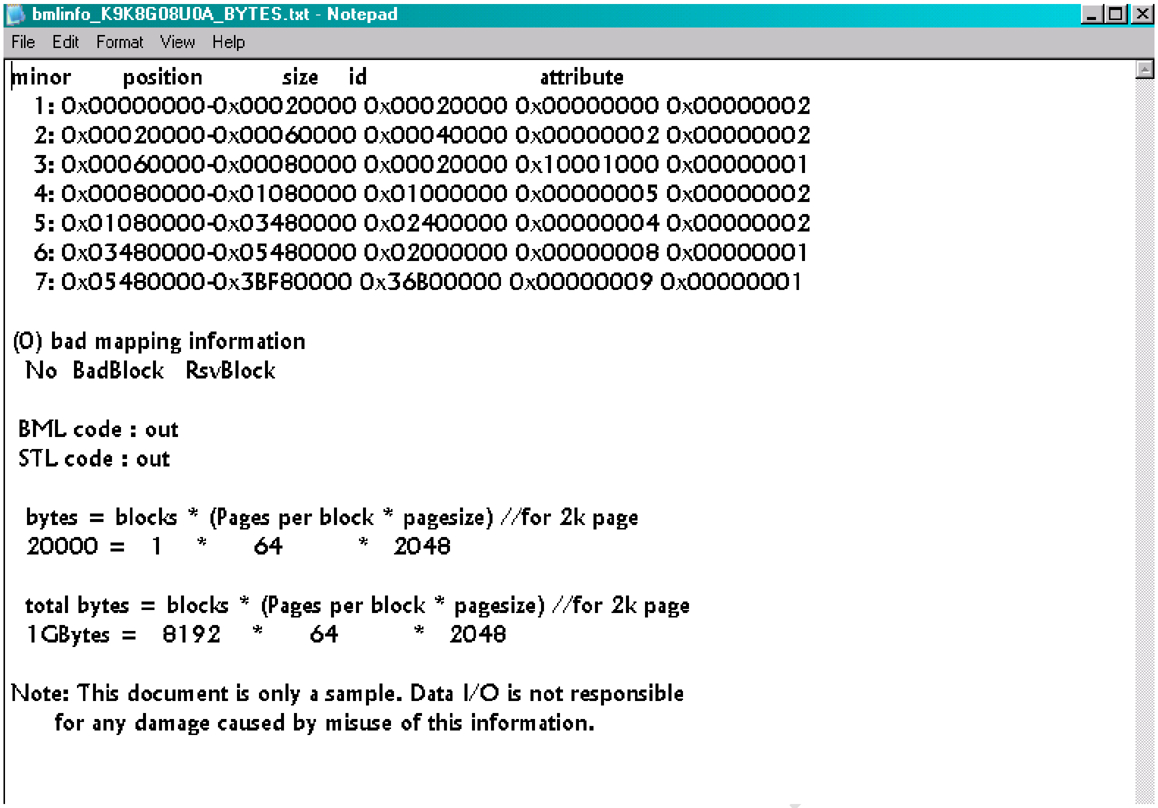
Structure of Table

Table in Blocks,



```
minor      position          size    id   attribute
   1: 0x00000000-0x00000001 0x00000001 0x00000000 0x00000002
   2: 0x00000001-0x00000003 0x00000002 0x00000002 0x00000002
   3: 0x00000003-0x00000004 0x00000001 0x10001000 0x00000001
   4: 0x00000004-0x00000084 0x00000080 0x00000005 0x00000002
   5: 0x00000084-0x000001A4 0x00000120 0x00000004 0x00000002
   6: 0x000001A4-0x000002A4 0x02000100 0x00000008 0x00000001
   7: 0x000002A4-0x00001DFC 0x00001B58 0x00000009 0x00000001

(0) bad mapping information
  No  BadBlock   RsvBlock

 BML code : out
 STL code : out

  bytes  =  blocks  *  (Pages per block  *  pagesize) //for 2k page
  20000  =    1     *      64       *    2048

  total bytes  =  blocks  *  (Pages per block  *  pagesize) //for 2k page
  1GBytes  =   8192    *      64        *    2048

Note: This document is only a sample. Data I/O is not responsible
     for any damage caused by misuse of this information.
```

Table in Bytes,


bmlinfo_K9K8G08U0A_BYTES.txt - Notepad
File Edit Format View Help

```
minor      position           size     id                    attribute
  1: 0x00000000-0x00020000 0x00020000 0x00000000 0x00000002
  2: 0x00020000-0x00060000 0x00040000 0x00000002 0x00000002
  3: 0x00060000-0x00080000 0x00020000 0x10001000 0x00000001
  4: 0x00080000-0x01080000 0x01000000 0x00000005 0x00000002
  5: 0x01080000-0x03480000 0x02400000 0x00000004 0x00000002
  6: 0x03480000-0x05480000 0x02000000 0x00000008 0x00000001
  7: 0x05480000-0x3BF80000 0x36B00000 0x00000009 0x00000001

(0) bad mapping information
 No  BadBlock   RsvBlock

 BML code : out
 STL code : out

 bytes  =  blocks  *  (Pages per block  *  pagesize) //for 2k page
 20000  =    1     *      64          *    2048

 total bytes  =  blocks  *  (Pages per block  *  pagesize) //for 2k page
 1GBytes  =    8192    *      64          *    2048

Note: This document is only a sample. Data I/O is not responsible
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```

The difference between the 2 types of tables only lays in the position and size information.

Special Notes

Revision History

V1.0 Date: 2012-May-03
Create this spec.

Appendix

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