

# Label Specification for IBM 3592 Cartridges when used in IBM Libraries

Part Number 18P8748

EC - H80288C

Version 1.2

02/26/2004

Author: Ray Yardy

Notes: Yardy@us.ibm.com

IBM Corporation  
9000 South Rita Road  
Tucson, AZ 85744

## Notes:

The hard copy version of this document is FOR REFERENCE ONLY.

It is the responsibility of the user to ensure that they have the current version. Any outdated hard copy is invalid and must be removed from possible use. It is also the responsibility of the user to ensure the completeness of this document prior to use.

A printed copy of this document is complete if it has all of the sections that are listed in the Table of Contents page(s), all page numbers are sequential starting with number 1.

Prior to GA of the 3592 drive this document may only be shared with customers who have exercised the appropriate IBM Confidential disclosure agreement provided by IBM program management.

IBM Confidential until product GA

2/26/2004

3592 Barcode Label Spec

Page 1 of 6

**This document is the property of IBM.** Use is authorized only for responding to a request for quotation or for the performance of work for IBM. All questions must be referred to the IBM purchasing department.

## **Introduction**

This document defines the format and contents of the external VOLSER label on 3592 cartridges for use in IBM libraries. The requirements stated herein are defined to standardize the label and allow users to purchase or print labels. The 3592 cartridge label uses the bar code symbology of USS-39. A description and definition is available from the Automatic Identification Manufacturers (AIM) specification Uniform Symbol Specification (USS-39) and the ANSI MH10.8M-1993 ANSI Barcode specification.

The barcode string will consist of a start character, eight alphanumeric characters and the stop character. Quiet zones precede and follow the start/stop characters. The first six (6) characters may be any combination of upper case A-Z or 0-9 (e.g. ABC123) to identify the cartridge volume. The last two (2) characters are determined by the 3592 cartridge media type (i.e. "JA" for the first tape cartridge generation).

No characters other than upper case alpha A-Z or numeric 0-9 are allowed.

The format and location of the human readable characters are also specified.

## **Surface Reflectivity**

The front surface of the label shall have a matte or non-reflective finish. For details see the aforementioned AIM USS-39 specification.

## **Human Readable Data**

The data encoded in the barcode, excluding the start and stop characters, shall also be displayed in a human readable form above the encoded data. The characters shall be 3.5 mm -0.75 high oriented as shown in the figure on page 5. The color of the characters and the background behind these human readable characters is by customer definition.

## **Encodation**

The description/format of start, series of characters and the stop character is described in the AIM Uniform Symbol USS-39 specification.

## **Quiet Zone**

The quiet zones are the areas preceding the start and after the stop characters and is clear of any printing or reflective properties that would cause spurious reflections, per AIM Uniform Symbol USS-39 specification.

## Optical Specification

The optical requirements and measurement techniques are further defined in the AIM Uniform Symbol USS-39 specification.

1. The print contrast of the Mcbeth PCMII shall be calibrated using the white calibration standard. All calibration and measurement shall be done with the filter select switch set in position A.
2. The reflectivity of the white background, RW, shall be defined for use in note 3 as the reflectivity measured in the center of narrow spaces using the Mcbeth PCMII print contrast meter. RW shall be between 70% and 85%. This measurement should avoid isolated print defects and edge roughness.
3. A spot is defined as an area anywhere within the white background in which the reflectivity is less than 65%. No spot may be greater than 0,102 mm enclosed diameter. There may be no more than five (5) spots, in the bar code area, per label. No two spots may be within 0,254 mm of each other.
4. The reflectivity of the black areas, RB, may be measured anywhere within any black area on the barcode. The print contrast signal, PCS, shall be defined as  $(RW-RB)/RW$  and is to be measured using the Mcbeth PCMII print contrast meter. PCS shall be 0.85 minimum. The PCS measurement shall avoid isolated print defects and edge roughness.
5. A void is defined as an area within a black area in which the PCS is less than 0.85. No voids may be greater than 0,102 mm enclosed diameter. There may be no more than five (5) voids, in the bar code area, per label. No two voids may be within 0,254 mm of each other.

## Physical Dimensions

The 3592 label dimensions are derived using the AIM USS-39 specification and the physical space provided in the cartridge for this label

1. Barcode Symbol height - 7,0 mm minimum. As measured to the inside of the edge roughness.
2. Wide to narrow ratio - 2,75
3. Narrow element width - 0,500 mm + 0,03/- 0,07 mm
4. Nominal width of the Wide spaces and bars is 1,375 mm.
5. Inter character gap - 0,500 mm + 0,03/- 0,07 mm
6. Bar code element width maximum shall be measured to the outside of the edge roughness as defined in Note 10. Space width is then the distance between bar maxima.
7. Quiet zone at beginning and end of printed barcode string - 10X narrow width = 5,0 mm
8. Total barcode string length (including quiet zones) nominal - 85,75 mm

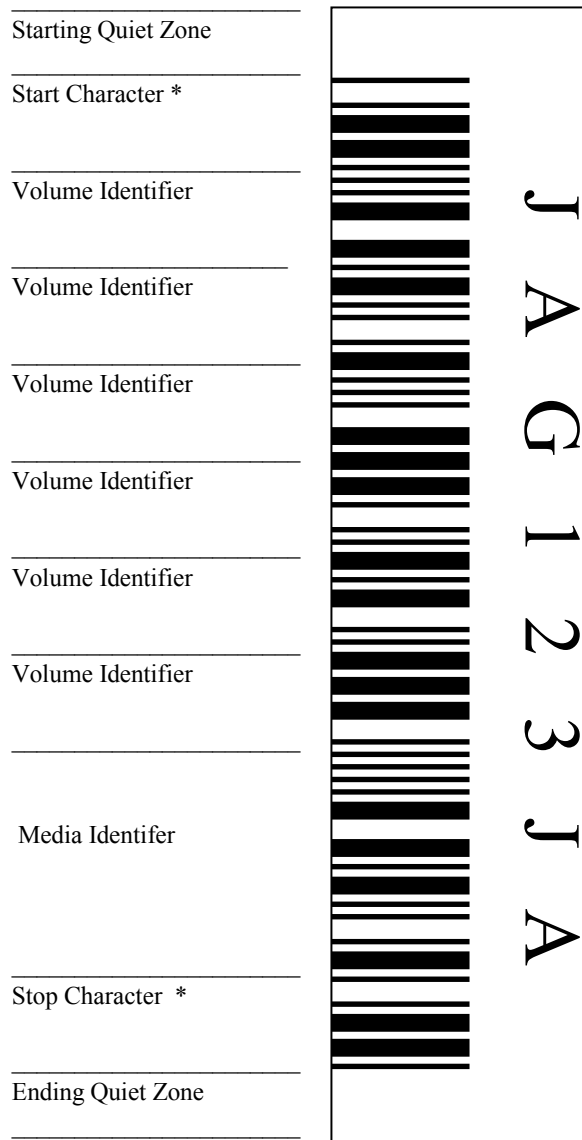
9. The barcode string may be printed in either direction on the label. But, must begin/end with a valid start/stop character (★).
10. The edge of the bar code shall be defined as the edge of all printed area attached to the bar. The edge roughness shall be defined as the transition encountered as a horizontal line is moved vertically from all black to all white. The edge roughness shall be 0,04 mm maximum
11. Unless otherwise specified, tolerances are X,XXX ± 0,127 mm, X,XX ± 0,76 mm.
12. Variation between all wide bars, white and black, shall be less than ± 0,04 mm.  
Variation between all narrow bars, white and black, shall be less than ± 0,04 mm.
13. Label stock dimensions: 88.5 mm x 11.9 mm +/- 0,4. Corners are cut with a 1,0 ± 0, 5 mm radius.

### Volume Identifier Formats

1. The volume identifier will be limited to the use of ASCII characters A-Z (41h-5Ah), 0-9 (30h-39h) and the combinations of “CLN” and “CE(space)” as described herein.
2. The prefix “CLNnnnJA” will be reserved for cleaning cartridges. The “nnn” alphanumeric field will be used to track individual cleaning cartridge activity. (i.e. usage and life).
3. Diagnostic/Service cartridges will use the prefix “CE {space} nnnJA”. The “nnn” must be a “numeric only” field to identify a specific diagnostic cartridge volume.
4. The volume identifier field does consist of six (6) left justified alphanumeric characters.  
SCSI-3 Medium Changer Commands (SMC) ANSI NCITS 314-199X
5. The media identifier characters “J and x” are controlled characters. The “J\*” designates the 3592 type of cartridge. The last character “\*” (alpha only) will designate a generation and capacity of the 3592 cartridge. Note that it is not a requirement that media be labeled with the subsequent generation label if it is reusable in later drives at the full capacity of that drive.

MEDIA CHARACTERS	DEFINITION	CAPACITY
JA	Standard Length - Generation 1	300 GB
JJ	Short/Fast Access - Generation 1	60 GB
JR	Worm Media - Short/Fast Access - Generation 1	60 GB
JW	Worm Media - Standard Length - Generation 1	300 GB

**Barcode label not to scale: Reference only**



**TABLE OF AUTHORITIES**

<u>CASES:</u>	<u>PAGE</u>
ANSI MH10.8M-1993 ANSI Barcode specification .....	2
SCSI-3 Medium Changer Commands (SMC) ANSI NCITS 314-199X .....	3
Uniform Symbol Specification (USS-39) .....	2