# UDI formats by FDA-Accredited Issuing Agency

Version 1.4: September 1, 2025

FDA has accredited three organizations as UDI issuing agencies: GS1, Health Industry Business Communications Council (HIBCC), and International Council for Commonality in Blood Banking Automation (ICCBBA). Each issuing agency has a unique device identifier (UDI) format that was reviewed and approved by FDA as part of the its process for accrediting issuing agencies. Any changes to the format of the UDI by an issuing agency must be approved by FDA before implementation.

This document contains information and links related to the format of the UDI for each FDA-accredited issuing agency. It is intended to provide a broad overview of each issuing agency's technical formats for the device identifier and production identifiers specified in the FDA's UDI rule. For detailed information on issuing agency formats and guidelines for UDIs, contact the issuing agency directly.

## *GS1® Issuing Agency*[1]

| Issuing Agency | Data Delimiters | Identifier | Data type | Human Readable Field Size | Database Field Size |
|---|---|---|---|---|---|
| GS1 | (01) | Device Identifier (DI) | Numeric | 16 | 14 |
| GS1 | (11) | Manufacturing/ Production Date | numeric [YYMMDD] | 8 | 6 |
| GS1 | (17) | Expiration Date | numeric [YYMMDD] | 8 | 6 |
| GS1 | (10) | Batch/Lot Number | alphanumeric | 22 | 20 |
| GS1 | (21) | Serial Number | alphanumeric | 22 | 20 |
| *GS1* | | ***Maximum Base UDI*** | ***alphanumeric*** | ***76*** | ***66*** |
| Example of GS1 easily readable plain-text UDI:<br>(01)51022222233336(11)141231(17)150707(10)A213B1(21)1234 | | | | | |

GS1 UDI Resource: [Are you ready for UDI?](https://www.gs1.org/sites/default/files/docs/healthcare/a3-ready_for_udi-bd.pdf)[2]

[1] https://www.gs1.org/

[2] https://www.gs1.org/sites/default/files/docs/healthcare/a3-ready_for_udi-bd.pdf

## *Health Industry Business Communications Council® (HIBCC) Issuing Agency*[3]

| Issuing Agency | Data Delimiters | Identifier | Data type | Human Readable Field Size | Database Field size |
|---|---|---|---|---|---|
| HIBCC | + | Device Identifier (DI) | Alphanumeric | 7 to 24 | 6 to 23 |
| HIBCC | $$7 | Lot Number Only | Alphanumeric | 21 | 18 |
| HIBCC | $ | Lot Number Only (included for backward compatibility) | Alphanumeric | 19 | 18 |
| HIBCC | $$ | Expiration Date followed by Lot Number | Exp Date: numeric [MMYY] | 6 | 4 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$2 | Expiration Date followed by Lot Number | Exp Date: numeric [MMDDYY] | 9 | 6 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$3 | Expiration Date followed by Lot Number | Exp Date: numeric [YYMMDD] | 9 | 6 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$4 | Expiration Date followed by Lot Number | Exp Date: numeric [YYMMDDHH] | 11 | 8 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$5 | Expiration Date followed by Lot Number | Exp Date: numeric [YYJJJ] – Julian Date format | 8 | 5 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$6 | Expiration Date followed by Lot Number | Exp Date: numeric [YYJJJHH] – Julian Date format with Hour option | 10 | 7 |
| | | | Lot Number: alphanumeric | 18 | 18 |
| HIBCC | $$+7 | Serial Number only | Alphanumeric | 22 | 18 |
| HIBCC | $+ | Serial Number only (included for backward compatibility) | Alphanumeric | 20 | 18 |
| HIBCC | $$+ | Expiration Date followed by Serial Number | Exp Date: numeric [MMYY] | 7 | 4 |
| | | | Serial Number: alphanumeric | 18 | 18 |
| HIBCC | $$+2 | Expiration Date followed by Serial Number | Exp Date: numeric [MMDDYY] | 10 | 6 |
| | | | Serial Number: alphanumeric | 18 | 18 |
| HIBCC | $$+3 | Expiration Date followed by Serial Number | Exp Date: numeric [YYMMDD] | 10 | 6 |
| | | | Serial Number: alphanumeric | 18 | 18 |
| HIBCC | $$+4 | Expiration Date followed by Serial Number | Exp Date: numeric [YYMMDDHH]<br>Serial Number: alphanumeric | 12<br>18 | 8<br>18 |

[3] https://www.hibcc.org/

| Issuing Agency | Data Delimiters | Identifier | Data type | Human Readable Field Size | Database Field size |
|---|---|---|---|---|---|
| HIBCC | $$+5 | Expiration Date followed by Serial Number | Exp Date: numeric [YYJJJ] | 9 | 5 |
| | | | Serial Number: alphanumeric | 18 | 18 |
| HIBCC | $$+6 | Expiration Date followed by Serial Number | Exp Date: numeric [YYJJJHH] | 11 | 7 |
| | | | Serial Number: alphanumeric | 18 | 18 |
| HIBCC | /S | Supplemental Serial Number, where lot number also required and included in main secondary data string | Alphanumeric | 20 | 18 |
| HIBCC | /16D | Manufacturing Date (supplemental to secondary barcode) | numeric [YYYYMMDD] | 12 | 8 |
| HIBCC | /14D | Expiration Date (supplemental to secondary barcode) | Numeric [YYYYMMDD] | 12 | 8 |
| *HIBCC* | | ***Maximum Base UDI*** | ***Alphanumeric*** | ***70 to 87*** | ***58 to 75*** |
| Example of HIBCC easily readable plain-text UDI: (**this show how serial number is encoded with '/S'** +H123PARTNO1234567890120/$$420020216LOT123456789012345/SXYZ456789012345678/16D20130202C | | | | | |

HIBCC UDI Resources:

HIBCC UDI and Labeling Resource Center – HIBCC

The Health Industry Supplier Labeling Standard for Patient Safety & Unique Device Identification

## *ICCBBA*[4]

| Issuing Agency | Data Delimiters | Identifier | Data type | Human Readable Barcode Field Size | Database Field Size |
|---|---|---|---|---|---|
| ICCBBA | =/ | Device Identifier (DI) | Alphanumeric | 18 | 16 |
| ICCBBA | =, | Serial Number | Alphanumeric | 8 | 6 |
| ICCBBA | = | Distinct Identification Code (Donation Identification Number) | Alphanumeric | 16 | 15 |
| ICCBBA | => | Expiration Date | numeric [YYYJJJ] | 8 | 6 |
| ICCBBA | =} | Manufacturing Date | numeric [YYYJJJ] | 8 | 6 |
| ICCBBA | &,1 | MPHO Lot Number | Alphanumeric | 21 | 18 |
| ICCBBA | | ***Maximum Base UDI for HCT/Ps*** | ***Alphanumeric*** | **79** | **67** |
| Example of ICCBBA easily readable plain-text UDI: =/A9999XYZ100T0944=,000025=A99971312345600=>014032=}013032&,1000000000000XYZ123 | | | | | |

ICCBBA UDI Resources:

ISBT 128 Standard along with Sample UDI labels: https://www.isbt128.org/ST-011

**Unique Device Identifier (UDI) Generator** tool can be used for creating the UDI for an ISBT 128 product.

**Device Identifier Checker** tool can be used to parse the various elements of the ISBT 128 Device Identifier (DI).

**Multiple Device Identifier Checker** tool can be used to check the validity of a list of ISBT 128 Device Identifiers (DIs) provided in a data file.

[4] http://www.iccbba.org

| ***Blood Bags Only*** | **Identifying Symbol** | **Identifier** | **Data type** | **Human Readable Barcode Field Size** | **Database Field Size** |
|---|---|---|---|---|---|
| ICCBBA | =) | Device Identifier (DI) for blood containers (bags) | Alphanumeric | 12 | 10 |
| ICCBBA | &) | Lot Number for blood containers (bags) | Alphanumeric | 12 | 10 |
| *ICCBBA* | | ***Maximum Base UDI for Blood Bags*** | ***Alphanumeric*** | ***24*** | ***20*** |
| Example of ICCBBA easily readable plain-text UDI for blood bags only:<br>=)1TE123456A&)RZ12345678 | | | | | |

Sample UDI labels: ST-023 ISBT 128 Standard for Base Labels[5]

[5] https://1a7593b7-ab5b-4634-952f-e71c6fa9a901.usrfiles.com/ugd/1a7593_4869156be51d4494a5849b0f610aeaf1.pdf

## *UDI Check Digit Rules*

In order to minimize errors and ensure accuracy in data entry and data exchange, DIs are verified by check digit rules designed by Issuing Agencies to validate the integrity of UDI. UDIs submitted through Web client/HL7 SPL submissions are checked based on the issuing agency's guidelines, which are available on their website.

Check digit calculators for FDA-Accredited Issuing Agency:

GS1:Check digit Calculator[6]

HIBCC: Modulo 43[7]

ICCBBA: Quick K Calculator | ICCBBA[8]
Device Identifier Checker | ICCBBA[9]

[6] https://www.gs1.org/services/check-digit-calculator
[7] https://www.hibcc.org/wp-content/uploads/Mod-43-Check-Character.pdf
[8] Quick K Calculator | ICCBBA
[9] https://www.isbt128.org/device-id-checker

## *UDI formats by FDA-Accredited Issuing Agency – Document History*

| Version | Date | Change | Rationale |
|---|---|---|---|
| 1.0 | May 7, 2014 | Original | |
| 1.1 | November 3, 2015 | Added /14D data delimiter to HIBCC chart | Additional data delimiter added to new HIBC Supplier Labeling Standard (SLS) 2.5 |
| 1.2 | March 9, 2016 | 1. In ICCBBA's tables changed: "DI" to "Device Identifier (DI)" and "Donation Identification Number" to "Distinct Identification Code (Donation Identification Number)"<br>2. In GS1 and HIBCCA tables, changed "DI" to "Device Identifier (DI)"<br>3. Provided links to examples of labels for accredited IAs | 1. At request of ICCBBA<br>2. For added clarity<br>3. As a resource |
| 1.3 | January 27, 2017 | Removed an erroneous space in example of HIBCC easily readable plain-text UDI | Typographical error |
| 1.4 | September 1, 2025 | Review and update of hyperlinks in the document<br><br>HIBCC Updates:<br>Updated $ Lot Number data delimiter to indicate "for backward compatibility only"<br>Updated $+ Serial Number: data delimiter $+ updated to indicate "for backward compatibility only" | |