

13.9 BAR CODE GUIDELINES

True Value's commitment to increasing efficiency of the supply chain requires compliant bar codes on all items and shipping containers. Proper item and logistical identification play a critical role in efficiently moving and tracking merchandise through True Value's supply chain.

True Value has adopted the GS1 global standards for item and logistic identification. GS1 (formerly EAN/UCC) is responsible for the establishment and implementation of global commerce standards for marking and communication. By adhering to the GS1 standards, True Value's bar coding requirements enable vendors to comply with standards followed by the industry. GS1 US (www.gs1us.org) represents the GS1 in the United States.

The GS1 standards define bar code languages (symbologies) and applicable application standards. Bar codes utilized by True Value are covered in the following sections:

- UPC and EAN bar codes used at point-of-sale (13.9.1.1 & 13.9.1.2)
- ITF-14 bar codes used on cartons (13.9.1.3 & 13.9.1.4)
- GS1-128 shipping labels used on pallets (13.9.2)

The GS1 General Specifications provide detailed information and minimum print quality requirements for each bar code language.

[To download a copy of the current version of the GS1 General Specifications, please click here.](#)

Vendors are responsible for providing accurate and compliant bar code symbols on items, cartons, and pallets. Vendors are required to submit logistic labels (Section 13.9.3) and may be requested to submit product bar codes to ensure True Value's standards are met. If quality problems arise, the Vendor must resolve them quickly. If the problem continues, True Value may debit the Vendor's account for costs incurred by True Value and, if the problem still cannot be resolved, True Value may seek an alternate Vendor's product.

13.9.1 GTIN Identification

GTIN describes a family of GS1 global data structures that employ 14 digits and can be encoded into various types of data carriers (i.e. bar codes). The GTIN uniquely identifies an item or carton based on a global standard which spans across all business sectors. GTIN identification includes individual items as well as all other packaging configurations.

Resources of Information:

- [GS1 GTIN Allocation Rules](#)
- www.GTIN.info

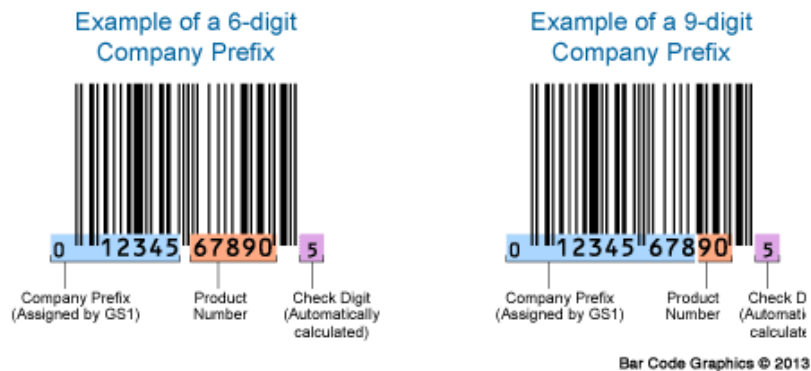


13.9.1.1: GTIN-12, GTIN-13 and GTIN-8 Data Structure

True Value retail point of sale scanners are configured to accept products identified with a GTIN-12, GTIN-8, or GTIN-13. The product identification string is comprised of three components:

- **GS1 Company Prefix** - Vendors must obtain a GS1 Company Prefix directly from GS1 to uniquely identify their company. Typically GTIN-12s use prefixes from GS1 US and GTIN-13s/GTIN-8s use prefixes from other global GS1 agencies. Depending on the number of items a company needs to identify, a GS1 Company Prefix may be 7 to 10 digits in length. When used in a GTIN-12, the leading “0” of a GS1 prefix is removed, resulting in a prefix 6 to 9 digits in length.
- **Product Number** - A unique number assigned by the vendor to represent an individual item. The length (number of digits) is determined by the GS1 Company Prefix. In a GTIN-12, a 6-digit prefix will enable a vendor to uniquely identify 100,000 products (00000-99999).
- **Check Digit** - The last digit of the GTIN-12, GTIN-13 and GTIN-8 is a calculated check digit. Using a MOD10 check digit algorithm, the calculated check digit prevents substitution errors. An online check digit calculator is available at <http://www.barcode-us.com/checkDigitCalculator.html>.

GTIN-12 Example



13.9.1.2 – UPC/EAN Bar Code Symbols



Size: Unlike other GS1 bar code symbols, UPC and EAN sizing is commonly conveyed as a percent. UPC-A & EAN-13 bar codes come in a nominal (100%) size of 1.469” wide and 1.02” in height, and can be scaled between 80% and 200%. The x-dimension of a 100% size UPC/EAN bar code symbol is .013”.

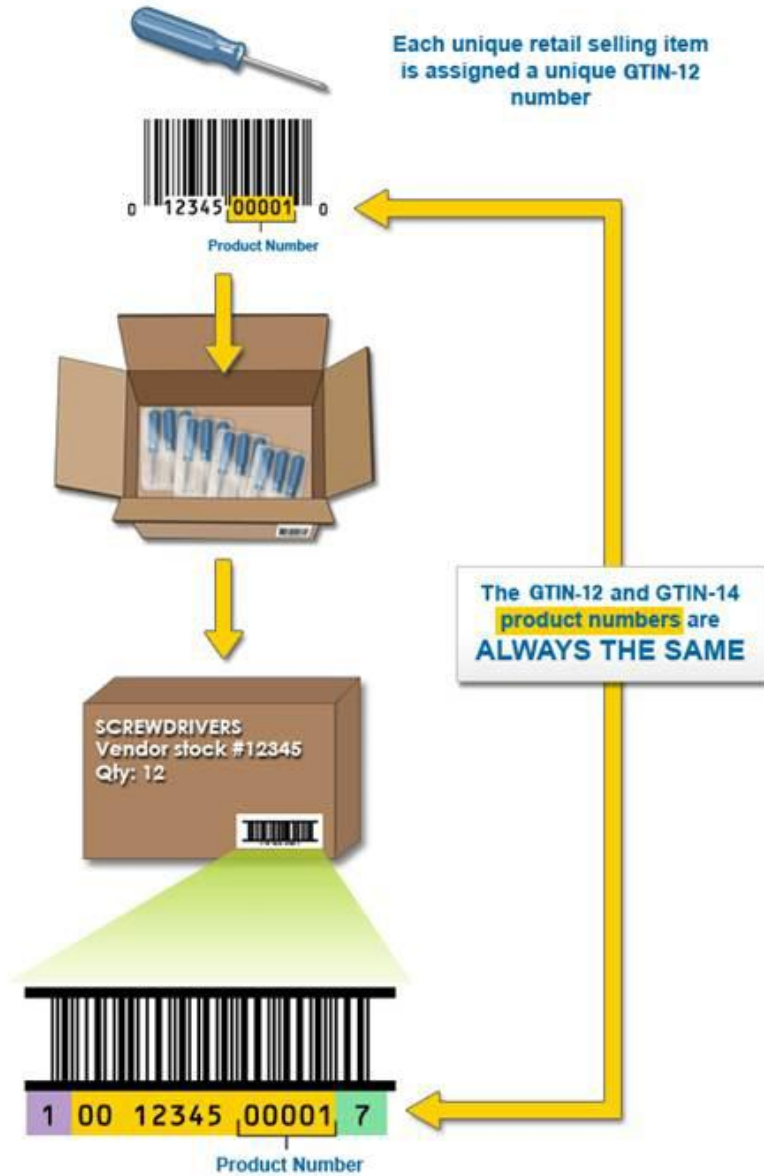
13.9.1.3 GTIN-14 Data Structure



Every True Value shelf and master carton should be identified with a GTIN-14. These cartons are not read by point-of-sale scanners. A GTIN-14 is comprised of four components:

- **Packing Indicator** – This denotes the level of packaging for a particular carton. This one-digit prefix can range from 0 to 8.
- **GS1 Company Prefix** - Vendors must obtain a GS1 Company Prefix directly from GS1 to uniquely identify their company. Depending on the number of items a company needs to identify, a GS1 Company Prefix may be 7 to 10 digits in length.
- **Product Number** – References the same product number used for the item level GTIN (GTIN-8, GTIN-12, GTIN-13) when a carton is made up of the same item. For cartons that contain an assortment of items a new product number is assigned.
- **Check Digit** - The last digit of GTIN-14 is a calculated check digit. Using a MOD10 check digit algorithm, the calculated check digit prevents substitution errors. An online check digit calculator is available at <http://www.barcode-us.com/checkDigitCalculator.html>.

Creating a GTIN-14 for a carton containing the same items



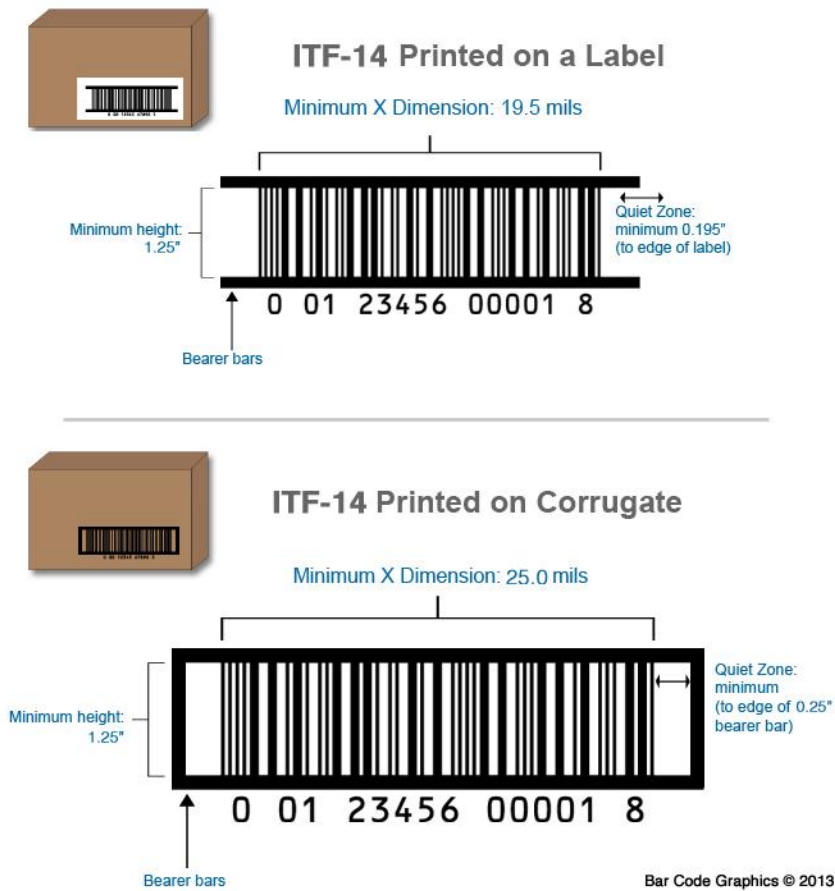
Uniform Carton GTIN-14 Data Structure	
Position	Data
1	Packaging Indicator. Used to designate different levels of packaging. The numbers "1" - "8" may be used.
2-13	The GS1 Company Prefix followed by the Product Number. GS1 Company Prefixes are 7-10 digits. Product Numbers are 2-5 digits. For uniform cartons, the product number is the same as that of the product contained within. There should be a total of 12 digits in positions 2-13.
14	Check Digit. Calculated using the Modulo 10 algorithm.

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13.9.1.4 – ITF-14 (GTIN-14 Bar Code)

The ITF-14 must be the data carrier used for the GTIN-14 data structure for use at True Value. ITF-14 is a 14 digit bar code that uses the “Interleaved 2 of 5” symbology (I2of5, or ITF).

ITF-14 bar code symbols include bearer bars, which are surrounding bars which protect the bar code image. If the ITF-14 is printed directly on a corrugated carton it must be surrounded by bearer bars. For ITF-14 bar code symbols printed on a label, only horizontal bearer bars along the top and bottom are necessary. The following illustration displays example images and the minimum sizing for each scenario.



Size: The two components which determine the width of an ITF-14 bar code symbol are the x-dimension and the wide-to-narrow ratio. As illustrated in the above picture, the minimum x-dimension varies depending on how the ITF-14 is printed. The other sizing component of an ITF-14, the wide-to-narrow ratio, is a measure of the wide elements to the narrow elements. The wide-to-narrow ratio is held constant and should always be between 2.25:1 to 3:1.

13.9.2 GS1-128 Shipping Label

True Value requires all pallets to use a GS1-128 Shipping Label which corresponds to the EDI 856 Advanced Ship Notice. Depending on how a vendor provides merchandise to True Value, the two GS1-128 Shipping Label formats are either for pallets of a single ITEM # or MIXED. The GS1-128 Shipping Label may contain several bar codes, including: Ship To Postal Code and Serial Shipping Container Code (SSCC-18).

GS1-128 Label for pallets containing single item #

FROM: Any Vendor 123 Any Street SomeTown, ST 01234		SHIP TO: True Value Hardware 123 Any Street SomeTown, ST 01234	
SHIP TO POSTAL CODE (420) 01234 		CARRIER: FEDX GROUND SCAC: RPSI PRO: 160072172647506 B/L: 160072172647506	
PO#: 01011234U0100		ITEM # 100008 UPC: 0985006059310 QUANTITY:	
SERIAL SHIPPING CONTAINER: (00) 1 0790437 000000525 5 			

13.9.2.1 SSCC-18 – Serial Shipping Container Code – Data Structure

The SSCC-18 identifier is used to uniquely identify a True Value pallet and is used in conjunction with the EDI 856 document. While a GTIN is identification for items and cartons, SSCC-18s are solely used as license plate identification for a single pallet shipment. An SSCC-18 is comprised of:

- **Application Identifier** - a component of the GS1-128 bar code Symbology (Section 13.9.3.3). “00” denotes SSCC-18.
- **Extension Digit** - has no defined logic and is meant to increase the capacity of the Serial Reference.
- **GS1 Company Prefix** - the same number used in GTIN identification.
- **Serial Number** - a serialized number uniquely assigned to every pallet label.
- **Check Digit** – should be calculated by labeling or EDI software.



Bar Code Graphics © 2013

13.9.2.2 –GS1-128 Bar Code Symbol

The SSCC-18 and Ship To Postal Code bar codes on a True Value GS1-128 label are encoded as GS1-128 bar codes. A typical GS1-128 bar code has the following:

- Code 128 start character (The SSCC-18 and Postal Code bar codes used by True Value use START-C)
- Code 128 FNC1 character
- Application Identifier (AI)
- Encoded Data
- Symbol Check character
- Stop Character

When a scanner reads a GS1-128 bar code, it will look at the first 2-4 digits for the applicable AI. For example, if "00" was the first part of the data string, the scanner would expect an 18-digit numeric **SSCC-18** data to follow. Likewise, if "420" was the first part of the data string, the scanner would expect a 5-digit numeric **Postal Zip Code** to follow.

For additional information, please visit www.gs1-128.info.

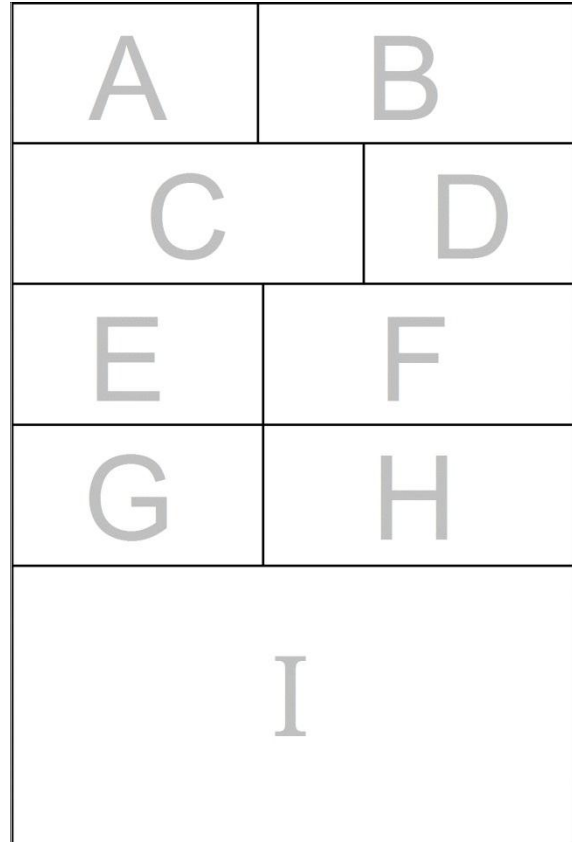
13.9.2.3 – True Value GS1-128 Shipping Label formats

FROM: Any Vendor 123 Any Street SomeTown, ST 01234	SHIP TO: True Value Hardware 123 Any Street SomeTown, ST 01234
SHIP TO POSTAL CODE (420) 01234 	CARRIER: FEDX GROUND SCAC: RPSI PRO: 160072172647506 B/L: 160072172647506
PO#: 01011234U0100	ITEM # 100008 UPC: 0985006059310 QUANTITY:
SERIAL SHIPPING CONTAINER: (00) 1 0790437 000000525 5 	

FROM: Any Vendor 123 Any Street SomeTown, ST 01234	SHIP TO: True Value Hardware 123 Any Street SomeTown, ST 01234
SHIP TO POSTAL CODE (420) 01234 	CARRIER: FEDX GROUND SCAC: RPSI PRO: 160072172647506 B/L: 160072172647506
PO#: 01011234U0100	MIXED
SERIAL SHIPPING CONTAINER: (00) 1 0790437 000000525 5 	

13.9.2.4 – GS1-128 Zone Breakdowns

FROM: Any Vendor 123 Any Street SomeTown, ST 01234		SHIP TO: True Value Hardware 123 Any Street SomeTown, ST 01234	
SHIP TO POSTAL CODE (420) 01234 		CARRIER: FEDX GROUND SCAC: RPSI PRO: 160072172647506 B/L: 160072172647506	
PO#: 01011234U0100		ITEM # 100008 UPC: 0985006059310 QUANTITY:	
G		H	
SERIAL SHIPPING CONTAINER: (00) 1 0790437 000000525 5 			



ZONE SPECIFICATIONS

ZONE A	SHIP FROM
Title	FROM
Height	1.0 inch [25.4 mm]
Width	1.25 inch [31.75 mm]
Characteristic	Mandatory
Data Content	Vendor name (Mandatory) and address of ship point
Data Source	856 Segment N1 + N4 (SF Loop)
Text Size	8 to 10 points
ZONE B	SHIP TO
Title	SHIP TO
Height	1.0 inch [25.4 mm]
Width	2.75 inch [69.85 mm]

ZONE B (cont.)	SHIP TO (cont.)
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Characteristic	Mandatory
Data Content	Complete Address
Data Source	856 Segment NI (ST Loop)
Text Size	12 to 14 points

ZONE C	CARRIER ROUTING BAR CODE
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Title	Postal Bar Code
Height	1.0 inch [25.4 mm]
Width	2.5 inch [63.5 mm]
Characteristic	Mandatory
Application Identifier	"420" for Domestic shipments. "421" for International shipments
Data Content	5 Digit Postal Zip Code
Data Source	856 Segment N4, (ST Loop)

BAR CODE SPECIFICATIONS:

Bar Code Symbology	GS1-128
Height	0.5 inch [12.7mm]
X-Dimension	0.0196 inch [.498 mm] minimum
Quiet Zone	0.25 inch minimum. Each Quiet Zone preceding and following the bar code.
Bar Code Print Quality	Minimum ISO/ANSI grade of "C" with 10 mil aperture

ZONE D	CARRIER ROUTING INFO
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Title	Carrier Routing Information
Height	1.0 inch [25.4 mm]
Width	1.5 inch [38.1 mm]
Characteristic	Mandatory
Data Content	Carrier Name, SCAC ,PRO, BOL
Data Source	856 Segment TD5 and REF BM [BOL], REF CN [PRO]
Text Size	10 to 12 points

ZONE E	TRADING PARTNER INFO: Vendor
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Title	Not Applicable
Height	1.0 inch [25.4 mm]
Width	2.0 inch [50.8 mm]
Characteristic	Mandatory
Data Content	PO#,
Data Source	856 Segments PRF
Text Size	12 to 14 points

ZONE F	TRADING PARTNER INFO: Shipment
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Title	Not Applicable
Height	1.0 inch [25.4 mm]
Width	2.0 inch [50.8 mm]
Characteristic	Mandatory

ZONE F (cont.)	TRADING PARTNER INFO: Shipment (cont.)
Data Content	For MIXED: MIXED For PACK-BY-ITEM: ITEM # (6-digit), UPC, QUANTITY
Data Source	856 Segments LIN, UP [UPC] UK [GTIN]. 850 PO107 element [ITEM NUMBER]
Text Size	12 to 14 points
ZONE G	NOT UTILIZED AT THIS TIME
ZONE H	NOT UTILIZED AT THIS TIME
ZONE I	SERIAL SHIPPING CONTAINER CODE
Title	SSCC
Height	2.0 inch [50.8 mm]
Width	4.0 inch [101.6 mm]
Characteristic	Mandatory
Application Identifier	"00"
Data Content	Serial Shipping Container Code SSCC-18 generated by the shipper
Data Source	856 Segment MAN GM will contain the number Note: Per GS1 Guidelines, an SSCC-18 number shall not be reallocated within one year of the shipment date.
BAR CODE SPECIFICATIONS:	
Bar Code Symbology	GS1-128
Height	1.25 inch [31.75 mm] minimum
X-Dimension	.0196 inch [.498 mm] minimum
Quiet Zone	0.25 inch minimum. Each Quiet Zone preceding and following the bar code
Bar Code Print Quality	Minimum ISO/ANSI grade of "C" with 10 mil aperture

13.9.3 GS1-128 Shipping Label Verification

True Value had partnered with DiCentral and Bar Code Graphics to provide GS1-128 shipping label verification services to our vendors. As part of EDI testing, all True Value vendors are required to submit GS1 Shipping Labels for compliance certification.

Bar Code Graphics True Value Testing website is <http://truevalue.symboltest.com> and vendors can call 800-662-0701 x510 or e-mail test@barcode-us.com for bar code inquiries.

Vendors are only required to test one format (either Single Item or Mixed) as part of the certification process. Although vendors may ship from varying locations, only a single ship location is required for mandatory certification. Vendors may elect to certify different label formats and ship locations to ensure compliance throughout their supply chain. Certification fees are per label sample provided and vendors are responsible for all testing fees.