The Global Language of Business

GS1 US Barcode Capabilities Test Kit

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Document Summary

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About GS1 US

GS1 US®, a member of GS1 global, is a not-for-profit information standards organization that facilitates industry collaboration to help improve supply chain visibility and efficiency through the use of GS1 Standards, the most widely used supply chain standards system in the world. Nearly 300,000 businesses in 25 industries rely on GS1 US for trading partner collaboration that optimizes their supply chains, drives cost performance and revenue growth, while also enabling regulatory compliance. They achieve these benefits through solutions based on GS1 global unique numbering and identification systems, barcodes, Electronic Product Code (EPC®)-based RFID, data synchronization, and electronic information exchange. GS1 US also manages the United Nations Standard Products and Services Code® (UNSPSC®).

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1 Introduction

U.S. industry members have requested support to better understand how their systems process barcodes and the data they contain. Transitioning to 2D barcodes to encode more information to satisfy consumer and trading partner needs is the main driver of this request.

To support these transitions, the GS1 US Barcode Capabilities Test Kit aims to provide an accurate, detailed method to determine how systems interact with barcodes approved for use in the GS1 System of Standards and the data they contain. This kit is intended to be used during planning phases to assess system readiness and determine updates that need to take place.

1.1 Sunrise 2027 and the Larger Migration to 2D

Throughout the world, retailers, brands, solution providers, and other parties have been migrating toward the use of 2D barcodes to meet pressing requirements for enriched consumer engagement and regulatory compliance. As the need for increased data grows, the use of 2D barcodes allows for additional use cases such as improving inventory management, enhancing recall readiness, championing sustainability and ethical sourcing, addressing product authentication, building brand trust, and more. The list of parties that benefit from the right data in the right data carrier is extensive across all sectors.

The transition from 1D barcodes, such as the EAN/UPC, to 2D data carriers that can hold more data to meet the rising number of use cases is currently in process. Sunrise 2027 marks a full industry transition to the use of 2D barcodes at point-of-sale (POS). After 2027, 2D barcodes will be accepted and processed at POS and although prior barcodes may still exist, systems should be able to process 2D barcodes. Find out more and how you can prepare here. For more information, please visit www.gs1us.org/Sunrise2027.

This kit is a valuable resource to test various systems beyond retail POS, such as receiving and stocking and general distribution scanning. Testing conducted as part of this kit is the first of several steps in the road to the adoption of 2D barcodes and is a useful tool in identifying which systems updates will be necessary to prepare for Sunrise 2027.

1.2 Legal Disclaimer

Important: As with all GS1 Standards and solutions, this document is voluntary, not mandatory. It should be noted that use of the words "must" and "require" throughout this document relate exclusively to technical recommendations for the proper application of the standards to support the integrity of your implementation.

2 GS1 US Barcode Capabilities Test Kit Overview

The following section provides a detailed overview of the GS1 US Barcode Capabilities Test Kit scope.

2.1 Intended Test Kit Users

This kit is designed for brands, retailers, solution and hardware providers, and other stakeholders looking to understand how GS1 barcodes and/or GS1 data syntaxes interact with systems. Test results provide opportunities for collaboration between stakeholders and further insight into current system capabilities, gaps, and future development needs.

2.2 Systems for Testing

This kit is designed to provide an understanding of baseline capabilities for any system that is interacting with GS1 barcodes containing a Global Trade Item Number® (GTIN®). This includes, but is not limited to:

- Store personnel scanning at a fixed check-out
- Self-checkout
- Retail receiving, inventory, stocking
- Hospitals
- Consumer mobile scan and go
- Pharmacy
- Distribution centers
- Transport and logistics
- Mobile apps

Note: If multiple systems are tested, separate test results for each platform should be captured.

3 Testing Scenarios Overview

The GS1 US Barcode Capabilities Test Kit is an easy-to-use method to assess hardware and software scanning system capabilities.

3.1 In Scope

Each scenario in the kit is intended to determine how systems scan the barcode, process encoded information, and store data by examining the following questions:

1. **Can the system read the barcode?**
   - Control tests using GTIN-12 will confirm if the system can process different types of barcodes.
2. **How does the system process the encoded data?**
   - Tests will confirm if a system can process GTIN-8, GTIN-12, GTIN-13, and GTIN-14 in different data formats/syntaxes.
   - Separate tests confirm how GS1 Application Identifiers (AIs) are processed.
3. **How is the processed data stored?**

- Testing should include analysis of how the processed data is stored in systems.
  - For example, is the GTIN stored in a 14-digit format?

3.2 Out of Scope

This kit is intended to determine how a system processes barcodes approved for use in different applications throughout the GS1 System. This includes understanding capabilities relating to the type of barcode and the contained data only. Testing and guidance related to system processing beyond what is in scope for the GS1 US Barcode Capabilities Test Kit require multiple tests that include different variables. Related items to barcode capabilities that are **not** in scope include:

- Restricted circulation numbers (RCNs)
- Barcode size and quality testing
- Barcode placement
- Systems optimized for long range scanning

See *section 5* for details on post-testing support.

4 Test Kit Set Up and Use

The GS1 US Barcode Capabilities Test Kit is intended to be used with any system expected to interact with barcodes approved for use within the GS1 System containing a GTIN.

4.1 Determine Which Systems to Test

When determining which systems will be tested, consider all scan environments where barcodes containing GTIN are used. While some organizations will only have a single system to test, others may need to conduct the tests multiple times using different combinations of hardware and software.

Note: It is not uncommon for scanning system components used in the same environment to have different capabilities.

For example:

- A 1D hand scanner and 2D slot scanner are used together at retail point-of-sale.
- A distribution center uses different software and systems than the hospital it supplies.
- A test environment may have more functionality enabled than a live environment.

4.2 Add Test GTINs

To determine how data is being processed, the GTINs encoded in the test barcodes must be added to systems. If the test GTINs are not added, systems will fail to find a match and, most commonly, return an error stating that the product cannot be found.

GTIN-12 (00012345000058) is used as the control for these tests and is critical for assessing system capabilities.

The following GTINs need to be added:

- 00000095200002: GTIN-8
- 00012345000058: GTIN-12
- 09520123456788: GTIN-13

- 10012345000055: GTIN-14

Note: Systems may display or label GTINs differently than what is shown above. GTINs provided are displayed in the recommended 14-digit format. Systems that do not use a 14-digit format may require the GTINs above to be modified for use. What modifications are required will be dependent on specific system nuances. For questions, please contact they system owner or reach out to GS1 US at *Sunrise2027@gs1us.org*.

4.3 Print the Test Kit

Before scanning can occur, the test barcodes must be printed. The barcodes have been printed using home office and industrial equipment. In both cases, the scans occurred without issue. Scanning the barcodes directly off a screen may be attempted but is not recommended. Scanning printed barcodes is a more reliable method.

The following should be considered when determining how to print the kit:

- Ensure that the printer is working properly, and the ink is not low.
- Shiny or glossy paper will be more difficult to scan from than a matte or less reflective alternative.
- Printing on both sides of a page may be problematic if a scanning system reads from multiple angles.
- Avoid using paper that is thin or otherwise transparent. This is especially important if printing on both sides of a page where opaque paper is required.
- Damage may occur during mailing. If mailing is required, caution must be taken throughout the process.
- To save paper, consider only printing *section 6*.

4.4 Test and Capture Results

Which Barcodes to Test

Not all barcodes must be scanned, though it is recommended to complete tests 1-18 in sections *6.1* and *6.2* to establish which barcodes are enabled in the system and which types of GTINs can be processed. It is not uncommon for unexpected barcode types to be enabled.

Section 6.3 contains the same GS1 Application Identifiers (AIs) in different types of barcodes. This is done to allow testing of how systems process data based on their capabilities and interests.

- **GS1 DataBar Expanded Stacked** – best used for systems that are **not** 2D capable and/or are expecting to interact with the barcode type. GS1 DataBar is most used in retail grocery environments.
- **GS1-128** – best used for systems that are **not** 2D capable and/or are expecting to interact with the barcode type. GS1-128 is most used in warehouses, distribution centers, and other non-retail scenarios.
- **GS1 DataMatrix** – best used for systems that are 2D capable and expected to interact with the barcode type.
  - The ability to scan and process the GTIN from GS1 Data Matrix is required for Sunrise 2027.
- **QR Code with GS1 Digital Link** – best used for systems that are 2D capable and expected to process GS1 Digital Link URI syntax.
  - The ability to scan and process the GTIN from a QR Code with GS1 Digital Link URI is required for Sunrise 2027.
- **Data Matrix with GS1 Digital Link** – best used for systems that are 2D capable and expected to process GS1 Digital Link URI syntax.

- **Note**: Data Matrix with GS1 Digital Link **is not** the same as the GS1 DataMatrix used in regulated healthcare. If seeking to test systems scanning regulated healthcare items, GS1 DataMatrix tests should be used in addition to AI tests in other barcode types.
- The ability to scan and process the GTIN from a Data Matrix with GS1 Digital Link URI is required for Sunrise 2027.

Important: If corresponding tests in section 6.1 fail, it is highly likely the tests in section 6.3 using the same barcode types will also fail.

Table 4-1 GS1 AI Test Overview

Barcode Type	Control Test Number	GS1 AI Test Numbers	GS1 AI Test Section
GS1 DataBar Expanded	11	19-26	*6.3.1*
GS1-128	4	27-34	*6.3.2*
GS1 DataMatrix	12	35-42	*6.3.3*
QR Code with GS1 Digital Link	13	43-49	*6.3.4*
Data Matrix with GS1 Digital Link	14	50-56	*6.3.5*

Explanation of Barcodes Used

As this kit is intended for use by any organization looking to understand their scanning capabilities, it has not been customized to reflect industry-specific requirements.

Barcodes in this kit may be used to test any scanning system, however it is important to note that not all the test barcodes are approved for use in all industries.

The human readable text may also appear differently than application specific requirements. The possible differences in the human readable text will not impact the barcode scan results.

Time Commitment

Scanning the test barcodes takes approximately **30-45 minutes** once set-up is complete. Testing may be stopped and resumed at a later point if no changes occur to the system.

Testing Process

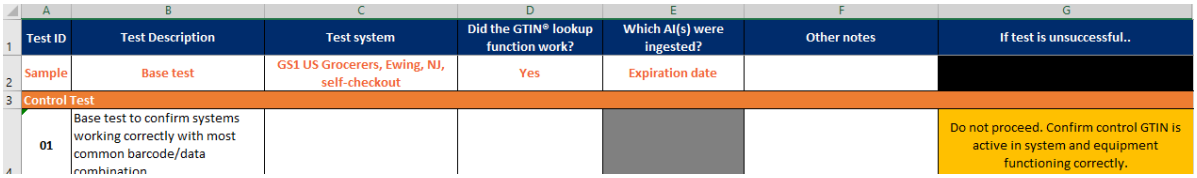
Once the set-up process is completed, the testing process can begin. To track your test results, please download the GS1 US Barcode Capabilities Test Results spreadsheet *here*. The spreadsheet captures what system was being tested, if the GTIN look-up function worked as intended, which GS1 Application Identifiers (AIs) are captured, and other notes.

If a scan takes place and the GTIN processes as expected in the system, the "Did the GTIN lookup function work?" column should be marked 'Yes.' An example of this might be having a GTIN added to a point-of-sale transaction or appear correctly on a pick-list.

For GS1 Application Identifier (AI) Tests, a column is available to note which AIs were processed. This column is greyed out for tests where AIs beyond GTIN are not present.

In addition to seeing if GTIN and other AIs are processed, review how the data is being captured and/or stored. For example, all types of GTIN should be stored in a 14-digit format.

Figure 4-1 Tracking Spreadsheet Example



	A	B	C	D	E	F	G
1	Test ID	Test Description	Test system	Did the GTIN® lookup function work?	Which AI(s) were ingested?	Other notes	If test is unsuccessful..
2	Sample	Base test	GS1 US Grocerers, Ewing, NJ, self-checkout	Yes	Expiration date		
3	Control Test						
4	01	Base test to confirm systems working correctly with most common barcode/data combination					Do not proceed. Confirm control GTIN is active in system and equipment functioning correctly.

This process should be repeated with a different tracking spreadsheet for all systems being tested.

Important: Test 1 is designed to be a system control test. If test 1 fails, confirm that the GTINs provided in section *4.2* have been added to the system. If test 1 is successful, continue with remaining tests and record results in in the tracking spreadsheet.

4.5 Review the Findings

After testing is complete, review and analysis is needed to understand baseline capabilities and plan next steps. Below are additional details on scenarios that may occur during testing.

Test 1 was unsuccessful

Test 1 is used as a control test because the majority of systems across different industries in the U.S. are capable of processing a GTIN-12 in a UPC-A barcode. The most common reason for this test to fail is due to the test kit GTIN provided in section *4.2* not being present in the system.

If the GTIN is correctly added, the hardware and/or software may not be able to process a UPC-A barcode.

The barcodes will scan, but the data is not processed

When scanners pass data received from barcodes into a receiving system, the software powering the receiving system must be able to process it. If the barcode can be scanned, but the data does not appear correctly, how the scanning and receiving systems integrate must be investigated.

Different installations of the same hardware are getting different results

Scanning hardware is powered by customizable software that allows certain barcode types and functions to be enabled. If the same hardware is producing different results, it is likely that the software is configured differently.

GTIN-8, GTIN-13, or GTIN-14 were unsuccessful

- If **GTIN-8** or **GTIN-13** in tests 15 and 16 fail it likely means that the system is unable to handle these types of GTINs. To check this:
  - Confirm that test kit GTINs provided in section *4.2* were added to the system
  - Confirm that the full EAN/UPC symbology is enabled in the scanning software.
- If both **GTIN-14** tests in 17 and 18 fail, then the system is likely unable to process the data. To check this:
  - Confirm that test kit GTINs provided in section *4.2* were added to the system.
  - Confirm that either test 03 or 12 was successful. If both test 03 and 12 were unsuccessful, the barcode types are not being read. This does not indicate whether or not that system can process a GTIN-14.

An optical scanner is being used, but 2D barcode tests were unsuccessful

If 2D barcodes are not being recognized by an optical scanner, then the functionality would need to be enabled within its software. To adjust the scanner settings, refer to the user manual and/or the manufacturer of the device for support.

GS1 Application Identifier (AI) tests were all unsuccessful

If barcodes can scan with only GTIN, but fail when AI(s) are added, it means that systems are missing the logic needed to parse, process, and/or store the AI data formats/syntax or may have nowhere to map the data to.

Only some of the GS1 AI tests were unsuccessful

Systems may not be configured to process all AIs used in the tests. Other systems may have limitations in the type of data they can process from an AI.

- **GTIN not first –** some systems may require GTIN to come first in the data string in order to process the barcode correctly. If the first test where GTIN comes before expiration date works, but the reverse test does not, then the system likely has incorrect GS1 element string syntax processing logic.

Table 4-2 "GTIN Not First" Test Reference

Barcode Type	Control Test Number	Variant Test Number	GS1 AI Test Section
GS1 DataBar Expanded	19	20	*6.3.1*
GS1-128	27	28	*6.3.2*
GS1 DataMatrix	35	36	*6.3.3*

- **Alpha characters –** some systems may have validation constraints that limit the characters a system will accept, despite being allowed in GS1 Standards. If the batch/lot test using value "123" passes, but test with value "aBc" fails, then the system likely has incorrect character logic.

Table 4-3 Alpha Character Test Reference

Barcode Type	Control Test Number	Variant Test Number	GS1 AI Test Section
GS1 DataBar Expanded	21	22	*6.3.1*
GS1-128	29	30	*6.3.2*
GS1 DataMatrix	37	38	*6.3.3*
QR Code with GS1 Digital Link	44	45	*6.3.4*
Data Matrix with GS1 Digital Link	51	52	*6.3.5*

- **AI not in system –** Some systems only have logic built in for AIs they expect to interact with. In these systems, unexpected AIs can cause failures in processing part or all of the data encoded in the barcode. Tests 25, 33, 41, 48, and 55 include an uncommon GS1 Application Identifier that would be more likely to fail than more common AIs.

GS1 DataMatrix AI test were successful, but QR Code or Data Matrix AI test were not

GS1 DataMatrix encodes AIs using a different data format/syntax than QR Code and Data Matrix. Although both syntaxes contain the same set of AIs, the logic required to interact with the two syntaxes

is unique. Systems would need to have QR Code/Data Matrix and GS1 Digital Link URI syntax enabled to process AIs correctly.

5 Post-Testing Support

Thank you for participating in the GS1 US Barcode Capabilities Test Kit. The testing will help you to make informed, data driven decisions for updating system capabilities in preparation for Sunrise 2027 and other 2D implementations.

Sharing your findings from the test kit is optional. If you choose to share your data with GS1 US it will remain confidential and will provide GS1 US greater insights into industry capabilities to create useful resources to equip industry for transitioning to 2D barcodes.

5.1 Pilots

If interested in participating in a pilot involving 2D barcodes leveraging GS1 Standards, please reach out to GS1 US at *Sunrise2027@gs1us.org*.

5.2 Resources

- GS1 US website landing pages
  - *Sunrise 2027*
  - *GS1 Digital Link*
  - *Supply Chain Visibility*
  - *Innovation at GS1 US*
- Reference documents
  - *Powering the Future of Retail – Building on the Foundation of the U.P.C. Barcode*
  - *GS1 US Advanced Data Carrier for Point-of-Sale (POS) Getting Started Guide*

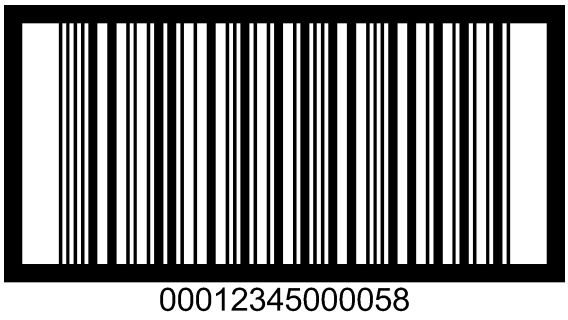
6 Test Barcodes

6.1 Barcode and Data Type Tests

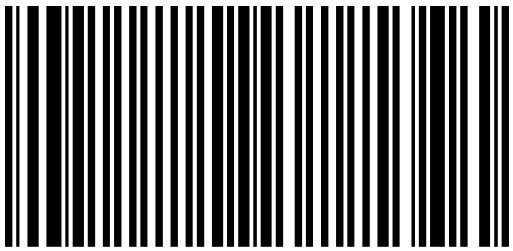
Test 01: Baseline Control UPC-A / GTIN: 00012345000058

Test 02: Barcode_Data Type UPC-E / GTIN: 00012345000058

Test 03: Barcode_Data Type ITF-14 / GTIN: 00012345000058



Test 04: Barcode_Data Type GS1-128 / GTIN: 00012345000058



Test 05: Barcode_Data Type GS1 DataBar Omnidirectional/ GTIN: 00012345000058

Test 06: Barcode_Data Type GS1 DataBar Truncated / GTIN: 00012345000058

Test 07: Barcode_Data Type GS1 DataBar Stacked / GTIN: 00012345000058

(01) 0 0012345 00005 8

Test 08: Barcode_Data Type GS1 DataBar Stacked Omnidirectional / GTIN: 00012345000058

Test 09: Barcode Data Type GS1 DataBar Limited / GTIN: 00012345000058

Test 10: Barcode_Data Type GS1 DataBar Expanded / GTIN: 00012345000058

Test 11: Barcode_Data Type GS1 DataBar Expanded Stacked / GTIN: 00012345000058

Test 12: Barcode_Data Type GS1 DataMatrix / GTIN: 00012345000058

(01) 0 0012345 00005 8

Test 13: Barcode_Data Type QR Code / GTIN: 00012345000058

https://example.com/01/00012345000058

Test 14: Barcode_Data Type Data Matrix / GTIN: 00012345000058

https://example.com/01/00012345000058

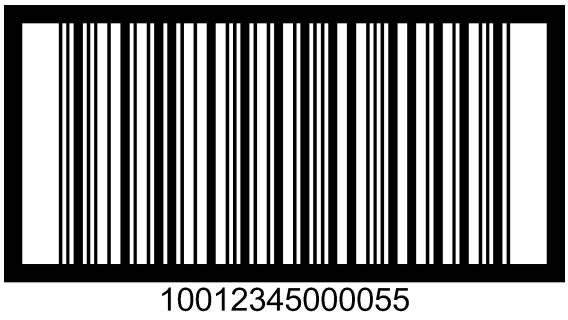
6.2 GTIN Acceptance Tests

Test 15: GTIN Acceptance EAN-8 / GTIN: 00000095200002

Test 16: GTIN Acceptance EAN-13 / GTIN: 09520123456788

Test 17: GTIN Acceptance GS1 DataBar Expanded Stacked / GTIN: 10012345000055

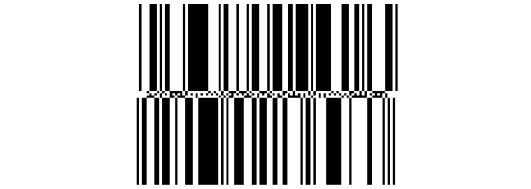
Test 18: GTIN Acceptance ITF-14 / GTIN: 10012345000055



6.3 GTIN Application Identifier Tests

6.3.1 GTIN Application Identifier Tests: GS1 DataBar Expanded Stacked

Test 19: GS1 Application ID GS1 DataBar Expanded Stacked / GTIN: 00012345000058 / Expiration = 01 JAN 2027



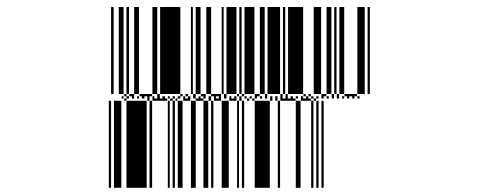
Test 20: GS1 Application ID 00012345000058 GS1 DataBar Expanded Stacked / Expiration = 01 JAN 2027 / GTIN:

Test 21: GS1 Application ID / Batch/lot = 123

GS1 DataBar Expanded Stacked / GTIN: 00012345000058

Test 22: GS1 Application ID GS1 DataBar Expanded Stacked / GTIN: 00012345000058 / Batch/lot = aBc

Test 23: GS1 Application ID GTIN: 00012345000058 / Serial Number = 987

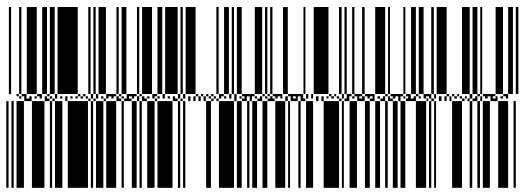


Test 24: GS1 Application ID lb	GS1 DataBar Expanded Stacked / GTIN: 00012345000058 / Net Weight = 12.34

(01) 0 0012345 00005 8 (3202) 001234

Test 25: GS1 Application ID GS1 DataBar Expanded Stacked / GTIN: 00012345000058 / IBAN = TEST

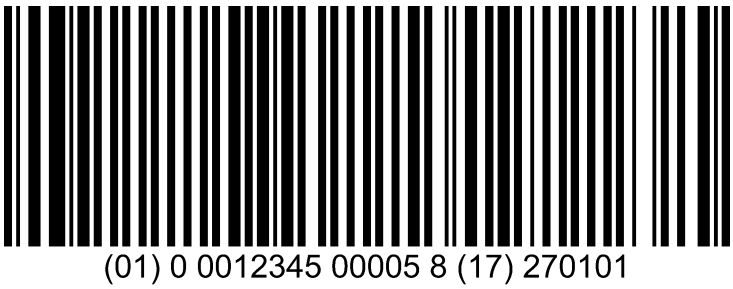
Test 26: GS1 Application ID GS1 DataBar Expanded Stacked / GTIN: 00012345000058 / Production Date = 01 JAN 21 / Expiration = 01 JAN 27 / Batch/lot =123 / Serial Number = 987 / Sell-by Date = 01 JAN 25



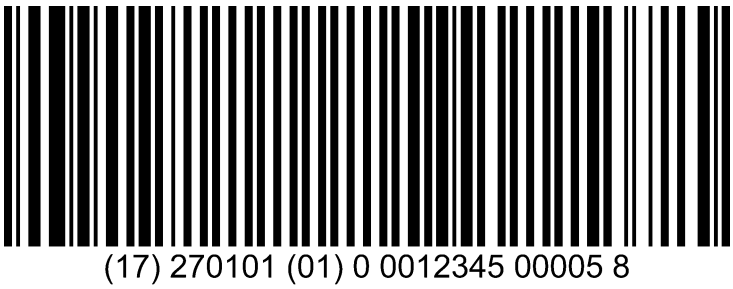
(01) 0 0012345 00005 8 (11) 210101 (17) 270101 (10) 123 (21) 987 (16) 250101

6.3.2 GTIN Application Identifier Tests: GS1-128

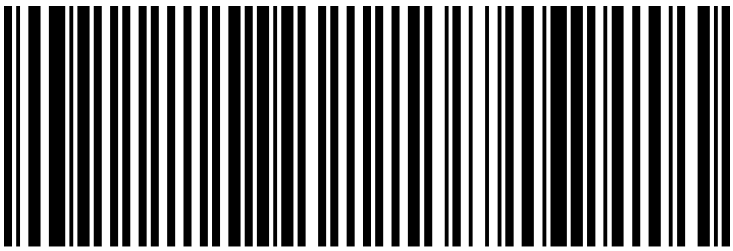
Test 27: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Expiration = 01 JAN 2027



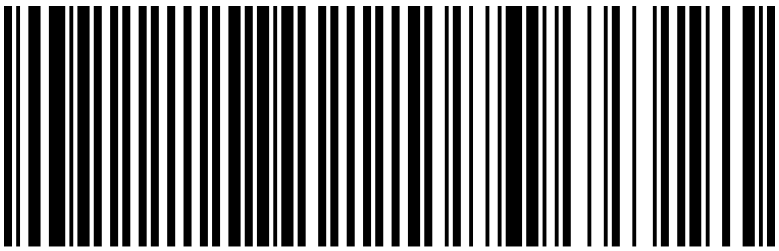
Test 28: GS1 Application ID GS1-128 / Expiration = 01 JAN 2027 / GTIN: 00012345000058



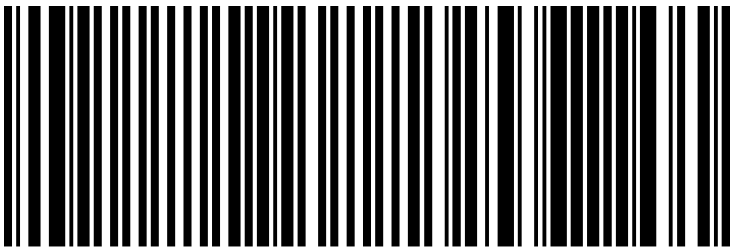
Test 29: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Batch/lot = 123



Test 30: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Batch/lot = aBc

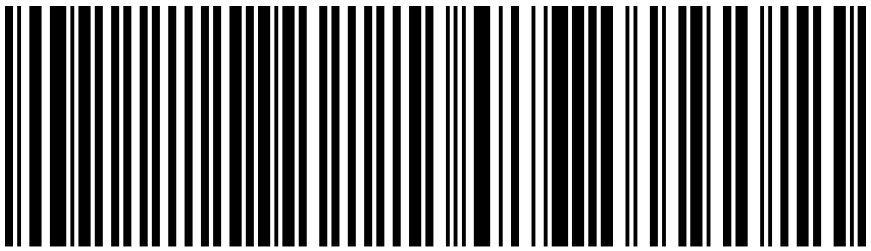


Test 31: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Serial Number = 987



Test 32: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Net Weight = 12.34 lb

Test 33: GS1 Application ID GS1-128 / GTIN: 00012345000058 / IBAN = TEST



Test 34: GS1 Application ID GS1-128 / GTIN: 00012345000058 / Production Date = 01 JAN 21 / Expiration = 01 JAN 27 / Batch/lot =123 / Serial Number = 987 / Sell-by Date = 01 JAN 25

6.3.3 GTIN Application Identifier Tests: GS1 DataMatrix

Test 35: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Expiration = 01 JAN 2027

(01) 0 0012345 00005 8 (17) 270101

Test 36: GS1 Application ID GS1 DataMatrix / Expiration = 01 JAN 2027 / GTIN: 00012345000058

(17) 270101 (01) 0 0012345 00005 8

Test 37: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Batch/lot = 123

(01) 0 0012345 00005 8 (10) 123

Test 38: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Batch/lot = aBc

(01) 0 0012345 00005 8 (10) aBc

Test 39: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Serial Number = 987

(01) 0 0012345 00005 8 (21) 987

Test 40: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Net Weight = 12.34 lb

(01) 0 0012345 00005 8 (3202) 001234

Test 41: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / IBAN = TEST

(01) 0 0012345 00005 8 (8007) TEST

Test 42: GS1 Application ID GS1 DataMatrix / GTIN: 00012345000058 / Production Date = 01 JAN 21 / Expiration = 01 JAN 27 / Batch/lot =123 / Serial Number = 987 / Sell-by Date = 01 JAN 25

(01) 0 0012345 00005 8 (11) 210101 (17) 270101 (10) 123 (21) 987 (16) 250101

6.3.4 GTIN Application Identifier Tests: QR Code with GS1 Digital Link URI

Test 43: GS1 Application ID QR Code / GTIN: 00012345000058 / Expiration = 01 JAN 2027

https://example.com/01/00012345000058?17=270101

Test 44 GS1 Application ID QR Code / GTIN: 00012345000058 / Batch/lot = 123

https://example.com/01/00012345000058/10/123

Test 45: GS1 Application ID QR Code / GTIN: 00012345000058 / Batch/lot = aBc

https://example.com/01/00012345000058/10/aBc

Test 46: GS1 Application ID QR Code / GTIN: 00012345000058 / Serial Number = 987

https://example.com/01/00012345000058/21/987

Test 47: GS1 Application ID QR Code / GTIN: 00012345000058 / Net Weight = 12.34 lb

https://example.com/01/00012345000058?3202=001234

Test 48: GS1 Application ID QR Code / GTIN: 00012345000058 / IBAN = TEST

https://example.com/01/00012345000058?8007=TEST

Test 49: GS1 Application ID QR Code / GTIN: 00012345000058 / Production Date = 01 JAN 21 / Expiration = 01 JAN 27 / Batch/lot =123 / Serial Number = 987 / Sell-by Date = 01 JAN 25

https://example.com/01/00012345000058/10/123/21/987?11=210101&16=250101&17=270101

6.3.5 GTIN Application Identifier Tests: Data Matrix with GS1 Digital Link URI

Test 50: GS1 Application ID Data Matrix / GTIN: 00012345000058 / Expiration = 01 JAN 2027

https://example.com/01/00012345000058?17=270101

Test 51 GS1 Application ID Data Matrix / GTIN: 00012345000058 / Batch/lot = 123

https://example.com/01/00012345000058/10/123

Test 52: GS1 Application ID Data Matrix / GTIN: 00012345000058 / Batch/lot = aBc

https://example.com/01/00012345000058/10/aBc

Test 53: GS1 Application ID Data Matrix / GTIN: 00012345000058 / Serial Number = 987

https://example.com/01/00012345000058/21/987

Test 54: GS1 Application ID Data Matrix / GTIN: 00012345000058 / Net Weight = 12.34 lb

https://example.com/01/00012345000058?3202=001234

Test 55: GS1 Application ID Data Matrix / GTIN: 00012345000058 / IBAN = TEST

https://example.com/01/00012345000058?8007=TEST

Test 56: GS1 Application ID Data Matrix / GTIN: 00012345000058 / Production Date = 01 JAN 21 / Expiration = 01 JAN 27 / Batch/lot =123 / Serial Number = 987 / Sell-by Date = 01 JAN 25

https://example.com/01/00012345000058/10/123/21/987?11=210101&16=250101&17=270101

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