Notes on TDS2 Demo Application

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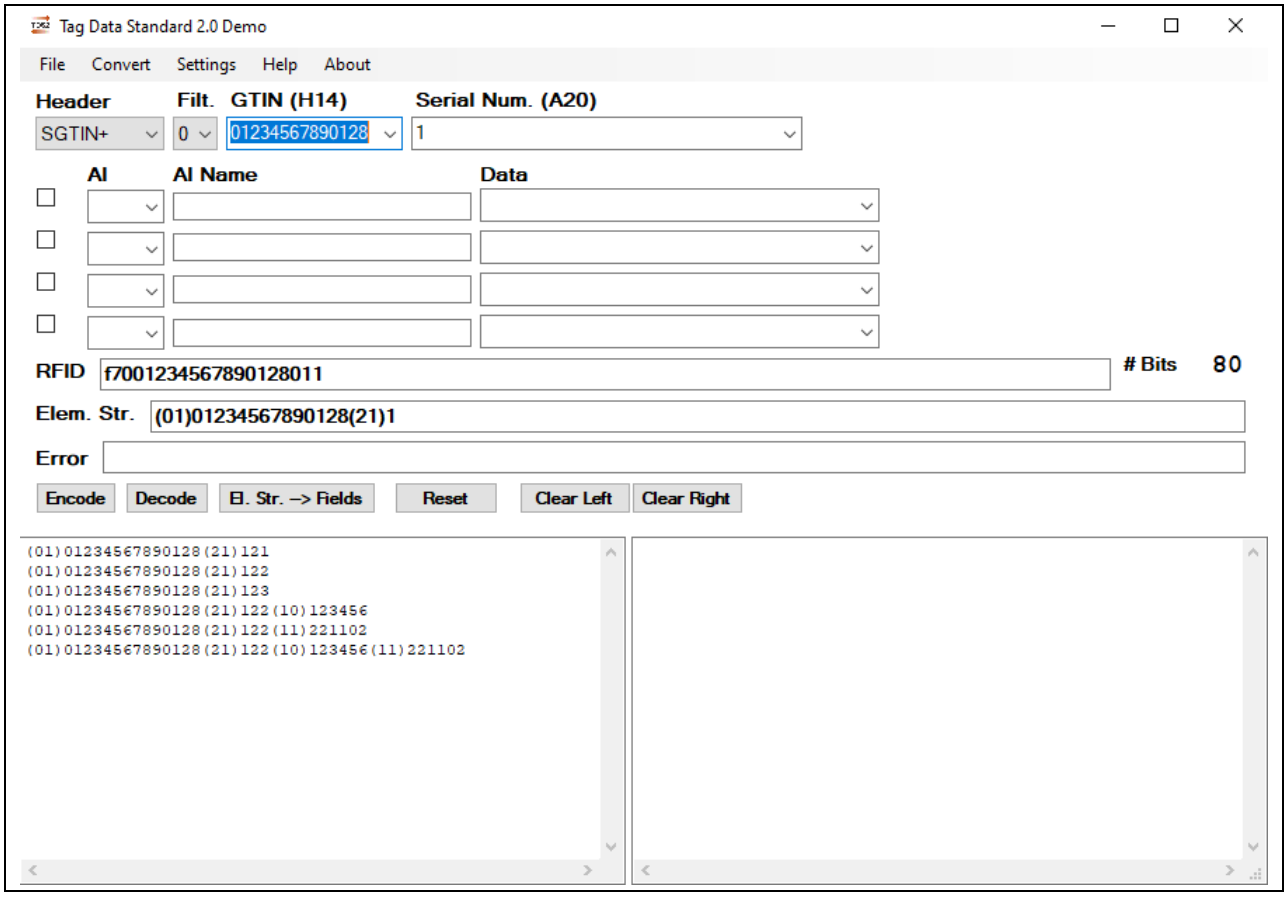
Introduction

The application is intended to demonstrate many of the aspects of the Tag Data Standards 2.0. The app does not attempt to address all the aspects of the revised standards.

A glossary is appended to the end of this document.



The above image shows a screenshot at the launch of the application. Data is entered into the fields and if the Encode button is pressed, the application computes the EPC string. If data is entered into the EPC text box and the Decode button is pressed, the app decodes the EPC string and populates the various fields. Most of the drop-down boxes include sample values. To the right of the controls are text values for the encoding of each field. Values such as serial number and batch/lot number are shown with bits packed to the left.

The controls are as follows:

Menu Bar

File

Allows loading and saving of data into the two multiline text boxes in the lower half of the form.

Open/Save/Save As File (Left/Right)

Opens/Saves/Saves-As data into/from the large text boxes at the bottom of the form.

Convert

Allow converting lines of data back and forth from the CSV multiline text box and the EPC multiline text box. It also allows converting the data in the fields into a new line in the CSV window.

Left → EPC

Converts the contents from the left text box, in either CSV or Element String format, into EPC format in the right text box.

EPC → CSV

Converts EPC data in the right text box into CSV format and appends it into the left text box.

Fields → CSV

Converts the data in the fields into CSV format and appends it into the left text box.

Fields → Elem. Str.

Converts the data in the fields into Element String format and appends it into the left text box.

Settings

Allows various changes to the settings of the program.

Hex Upper/Lower Case

Uses Upper/Lower case for hexadecimal case.

Diagnostic mode

Displays EPC data in blocks for each AI in right text box.

Use Padding

Adds zeros to the end of the EPC data to bring the bit-count to a multiple of 16 bits per TDS-2 standard.

Post CSV/Elem. Str.

Append a CSV/Elem. Str. format string to the left text box when Encode is pressed.

Help

Provide helpful information.

Show Hints

Allows enabling or disabling fly-over hints.

AI Name Info

Shows information on the data in the AI Name field.

About

Shows the version information for the application.

Data Entry Fields (Base)

Note: white text boxes with drop-down ability provide sample data. Most allow data to be typed into them allowing access to all possible data (e.g., AIs). Gray text boxes only allow selection from the drop-down list (e.g., Filter and Date Type).

Header

Use the drop-down menu to enter the encoding format here. (e.g., SGTIN+, DSGTIN+, etc.)

Filter

Enter the filter value here. Note: The most significant bit of the filter value is an indicator that additional (extended) attribute date is appended to the EPC string. This bit is automatically assigned based on one or more of the AI fields being checked.

For DSGTIN+

Date Type

Allows selection of the date type from a drop-down box (AI).

Date

The date information is entered as YYMMDD.

GTIN

This is the 14-digit GTIN value (including check digit). If the check digit is not correct, then a warning message is posted with a suggestion.

Serial Number

The serial number data. Note: The app checks this value against the available encoding schemes to determine the encoding scheme that uses the least number of bits.

For Other Encoding Formats, some of the fields (e.g., GTIN or serial number) may be replaced by the appropriate fields for the selected encoding scheme. The size of the boxes will also change as appropriate.

Data Entry Fields (Extended Attributes)

Check Box

Enables the line of extended attribute data.

AI

Enter the desired AI into this box to select which type of extended attribute is to be used.

AI Name

Displays a brief descriptive name of the AI and a code to identify the type of data and length.
Note: This is not a data entry field.

Data

Enter the data here for this extended attribute.

Fields (output)

EPC

The calculated EPC value is displayed here. Alternatively, a value may be pasted or edited here and the decode button can be pressed to decode the EPC string.

Element String

Data is displayed here showing the GS1 element string encoded by the field data when the Encode button is pressed. Data can also be entered here and the El. Str. → Fields button pressed to convert the element string data to field data.

Error Box

Error and warning messages are displayed here.

Left Text Box

The large text box on the bottom-left is for comma-separated values of the data in the fields. Double clicking one of these values will populate the fields with the decoded data. Selecting (from the menu) Convert – CSV → EPC will convert all the lines in the table (CSV or element string format) into EPC entries in the large text box on the right. Values may be cut or pasted as desired. Use the File options to load or save data to this box.

Right Text Box

This text box, the large box on the right, is like the left text box. From the menu, use Convert – EPC → CSV to convert all the values to CSV and element string format.

Buttons

Encode

Encodes field data into EPC and Element strings. Depending on settings. This information is appended to the data in the left text box.

Decode

Decodes the data in the EPC text box into field data.

El Str → Fields

Converts data in the Elem Str text box into field data.

Reset

Resets all data and error messages.

Clear Left/Right

Clears all data in the left/right text boxes.

Glossary

AI – Application Identifier (identifies the type of data for an extended attribute).

CSV – Comma separated values. Organization depends on encoding scheme. For SGTIN+ it is Header Name, Filter, GTIN, Serial Number, [AI, Data, Additional Data, [AI, Data, Additional Data], …].

Element String – A format used by GS1 to identify the data in an EPC or barcode.

EPC – Electronic Product Code (RFID data)

GTIN – Global Identification (similar to a UPC code).