Excel™ Add-In EPC Translator 1.1

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Contents

Version Control

| Ver	Notes
0.9	Initial Version. SGTIN only.
1.0	SSCC, GRAI, GDTI, added additional info to SGTIN, added binary output.
1.1	Added GID functionality

Introduction

With the increased usage of RFID in various industries, the need to be able to convert from the EPCglobal® family of standardized data encoding back to its base information (such as the originating GTIN or UPC/EAN value) has become more important. This Microsoft Excel Add-in has been designed to convert some of the common EPCglobal® formats back to their base parts. For a full discussion of how the conversions work, visit the GS1 EPCglobal® site (http://www.gs1.org/epcglobal).
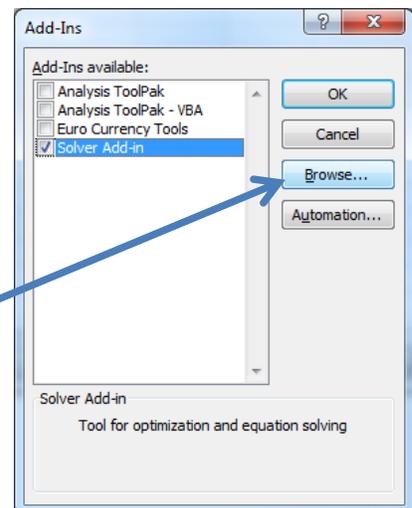
Installation

To install this add-in, open Microsoft Excel and click on the File tab (the round Office button for Excel 2007) and click on Options.

In the resulting dialog box, click on "Add-Ins" and then "Go"
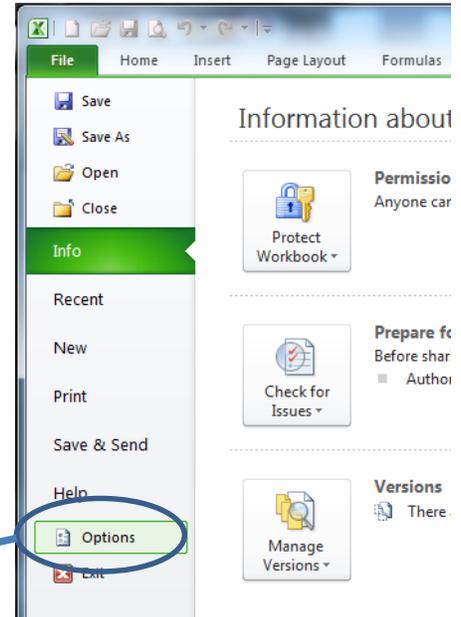
When the "Add-Ins" dialog box appears, select "Browse" and select the "EPC_Translator_AddIn.xla" file.
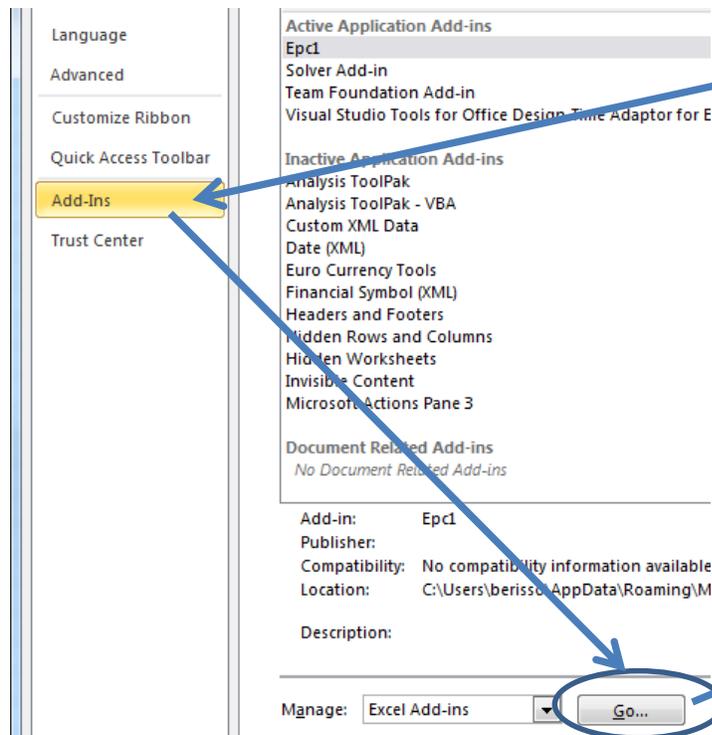
The "EPC_Translator_AddIn" will be added to the list of available Add-ins.

That's it! You are now ready to translate your EPCglobal data into your desired format.

Usage

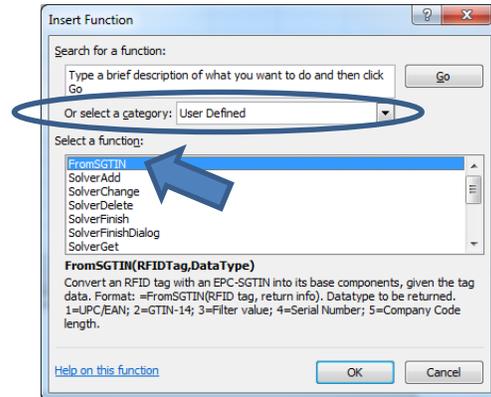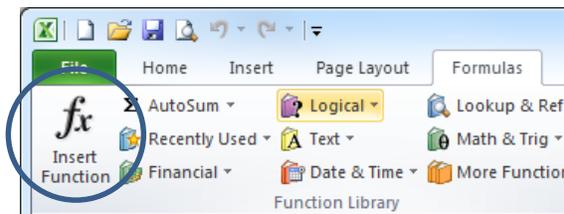To use any of the EPC Translator functions, just type in the function name like you would with any other Excel function.
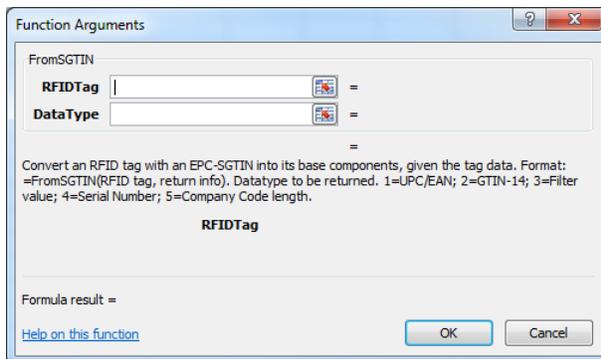
NOTE

For users of Excel 2007, you will have to use the "Insert Function" button on the "Formulas" tab to access the EPC Translator functions. They will be found in the "User Defined" category.

FromSGTIN

To convert from a EPCglobal® Serialized Global Trade Item Number (SGTIN).

Pass the RFID tag's value as the first parameter and the information you want back as the second parameter.

DataType	Returned value
0	96 bit binary equivalent of the tag value.
1	UPC/EAN value (what is found on the product).
2	GTIN – the GS1 GTIN value that was actually encoded in the RFID tag.
3	Filter value (the unit of measure level per GS1 rules)
31	Filter value plus an abbreviated description
32	Filter value plus the full TDS description
4	Serial Number (the serial number of the item.
5	Company code length – the length of the company prefix per GS1 rules.

It should be noted that the function will return a string value for ALL datatypes. If you are using the returned value in a lookup function, you may need to convert the result from a string back to a numeric value. Use the "Value" function to do this.

FromSGTIN198

To convert from a 198 bit EPCglobal® Serialized Global Trade Item Number (SGTIN).

Pass the RFID tag's value as the first parameter and the information you want back as the second parameter.
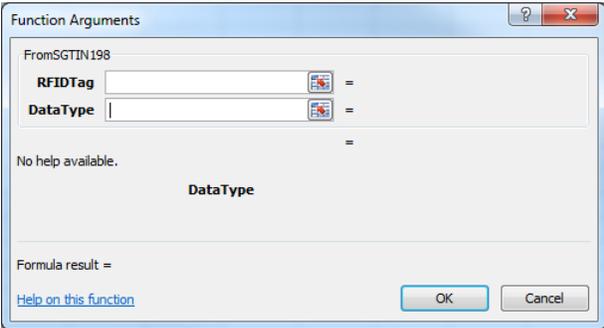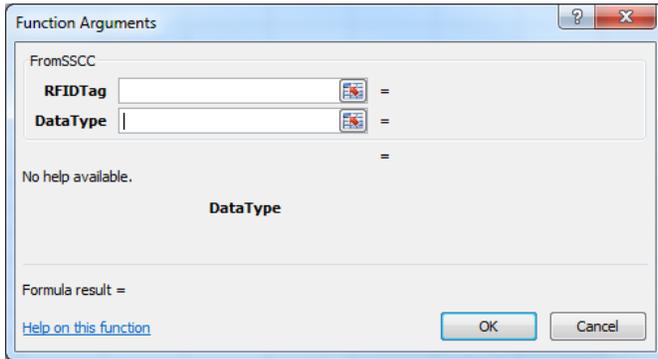

DataType	Returned value
0	198 bit binary equivalent of the tag value.
1	UPC/EAN value (what is found on the product).
2	GTIN – the GS1 GTIN value that was actually encoded in the RFID tag.
3	Filter value (the unit of measure level per GS1 rules)
31	Filter value plus an abbreviated description
32	Filter value plus the full TDS description
4	Serial Number (the serial number of the item.
5	Company code length – the length of the company prefix per GS1 rules.

It should be noted that the function will return a string value for ALL datatypes. If you are using the returned value in a lookup function, you may need to convert the result from a string back to a numeric value. Use the "Value" function to do this.

FromSSCC
To convert from a 96 bit EPCglobal® Serialized Shipping Container Code (SSCC).

Pass the RFID tag's value as the first parameter and the information you want back as the second parameter.

DataType	Returned value
0	96 bit binary equivalent of the tag value.
1	SSCC
3	Filter value (the unit of measure level per GS1 rules)
31	Filter value plus an abbreviated description
32	Filter value plus the full TDS description

It should be noted that the function will return a string value for ALL datatypes. If you are using the returned value in a lookup function, you may need to convert the result from a string back to a numeric value. Use the "Value" function to do this.

FromGRAI
To convert from a 96 bit EPCglobal® Global Returnable Asset Identifier (GRAI).

Pass the RFID tag's value as the first parameter and the information you want back as the second parameter.
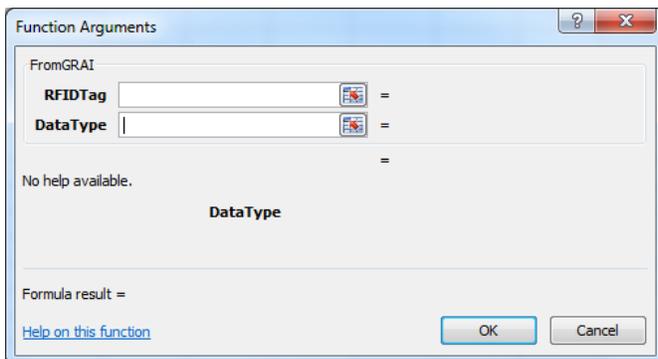
DataType	Returned value
0	96 bit binary equivalent of the tag value.
1	GRAI
2	Asset type
3	Filter value (the unit of measure level per GS1 rules)
31	Filter value plus an abbreviated description
32	Filter value plus the full TDS description
4	Serial Number
5	Company code length – the length of the company prefix per GS1 rules.

It should be noted that the function will return a string value for ALL datatypes. If you are using the returned value in a lookup function, you may need to convert the result from a string back to a numeric value. Use the "Value" function to do this.

FromGID

To convert from a 96 bit EPCglobal® General Identifier.

Pass the RFID tag's value as the first parameter and the information you want back as the second parameter.

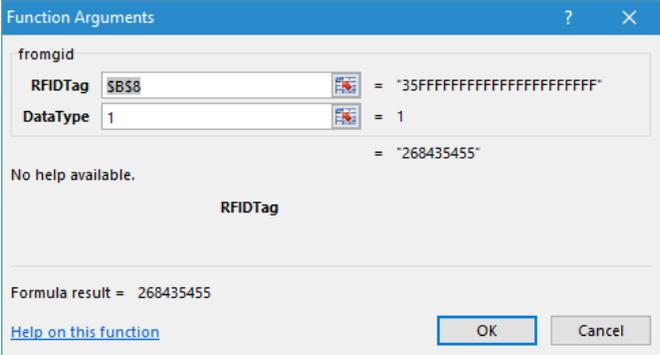| DataType	Returned value
0	96 bit binary equivalent of the tag value.
1	General Manager Number
2	Object Class
3	Serial Number

It should be noted that the function will return a string value for ALL datatypes. If you are using the returned value in a lookup function, you may need to convert the result from a string back to a numeric value. Use the "Value" function to do this.

ToGID

To generate a GID tag value from the General Manager Number, Object Class and serial number.

Pass the component values as shown to get back hexadecimal tag value. As an optional parameter, you can set "CalcCheckDigit" to true and the GTIN check digit will be verified. If it is correct, "Check Digit OK" will be returned. If not, "Invalid Check Digit" will be returned.

DataType	Required Value
General Manager Number	Integer value between 0 and 2,68,435,455 inclusive.
Object Class	Integer value between 0 and 16,777,215 inclusive.
Serial Number	Integer value between 0 and 68,719,476,735.
Display Binary	Boolean option to display 96 bit binary equivalent of the tag value that defaults to False.

ToSGTIN

To generate a tag value from the GTIN, filter value and serial number.

Pass the component values as shown to get back hexadecimal tag value. As an optional parameter, you can set "CalcCheckDigit" to true and the GTIN check digit will be verified. If it is correct, "Check Digit OK" will be returned. If not, "Invalid Check Digit" will be returned.
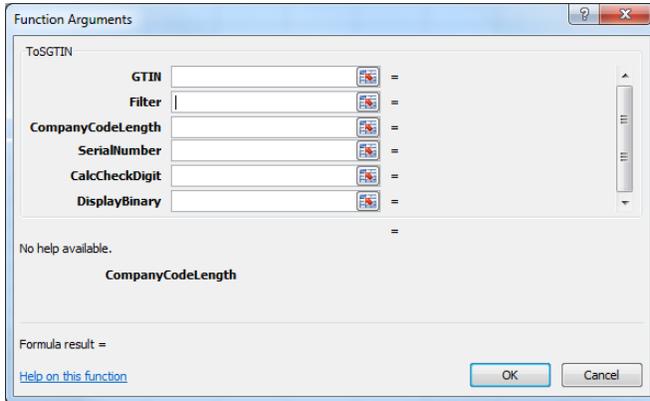

DataType	Required Value
GTIN	14 digit Global Trade Item Number as assigned or derived per GS1 rules.
Filter	Integer value of 0-7.
Company Code Length	Number of digits that make up the company code. Valid lengths are between 6-12
Serial Number	Integer value between 0 and 274,877,906,943
CalcCheck Digit	Boolean option to calculate the GTIN check digit that defaults to False.
Display Binary	Boolean option to display 96 bit binary equivalent of the tag value that defaults to False.

Note: CalcCheckDigit and DisplayBinary are not meant to work together. If both are set to True, CalcCheckDigit will take priority and the binary information will not be displayed.

Trouble Shooting

Problem	Solution(s)
Function returns "Evaluation version has expired"	Your evaluation version of the Add-in has expired. Please contact BAIT Consulting (www.bait-consulting.com) or your distributor for a licensed version of the add-in.
Function returns "Invalid company code length"	The encoded data in your RFID tag is not SGTIN compliant. Specifically, the calculated company code does is not the correct length.
Your VLookUp is not returning a valid response.	The function is returning a string value for the value of what you are looking up. If your lookup value should be formatted as a number, use the "Value()" function in Excel to convert the text back to a numeric value.
You get a message box stating an "Invalid hex character found:"	There are characters in the RFID tag string that are not valid hexadecimal values. Check your data string.
Function returns "#Value!"	Your RFID tag string is not valid. Check your data string.
You have spaces in your tag data	Use Excel's "Substitute" function to remove the spaces from in between sets of digits. =Substitute(A1," ","")