

GS1-128 (UCC/EAN128) Function Code Transmission

If scanning a GS1-128 (UCC/EAN128) in any of the keyboard modes is causing a problem, the barcode below will fix it in most cases.



By scanning the above code the scanner stops sending all GS characters that by default get translated to F8. With keyboard mode is meant interfaces where the scanned data appears on the screen where data can also be typed on the keyboard to appear on screen. *(Translating GS into another character is not part of this document)*

Resume of the GS1-128 standard

The GS1-128 standard is an application standard for the Code 128 symbology. That means it uses the standard Code 128 symbology and by applying extra 'rules' GS1 added additional functionality.

A GS1-128 symbol is identified by a FNC1 (a Code 128 function code 1 character) at the first position and the type of data in the symbol is identified by a GS1-128 Application Identifier (AI) at the 2nd position.

An application identifier is a numeric value to which GS1 assigned a certain format in the data. This format can include data separators represented by again FNC1 characters.

The GS1-standard defines that the first FNC1 remains a FNC1 to identify the symbols as a GS1-128 symbol but all other FNC1's are translated to a GS character and/or should be free translatable to a character of the customer's choice.

The Code 128 - 128FNC command

Customer often expect the "Function Codes ON/OFF" option in older User's Guides to allow to control if the Code 128 FNC1's and any other control characters are being sent or not, however it only affects the serial data which with this option will or will not be preceded by an [x81]. Why x81? Hex 81 is the scanner internal reference for the Aim identifier, and has no meaning to the outside world. *(Suggestion was made to remove it from all user guides)*

The generic RMVFNC command

To really avoid sending the FNC1's after the first FNC1 there is a generic command that turns off the transmission, of what is called 'function codes'. Instead of function codes it would have been better to refer to this as ASCII control characters. As in GS1-128 the FNC1 is represented as an ASCII control character [GS], this option prevents FNC1's or GS characters from appearing in the scanner's output.

{c1}	{0x81}	[Start C]	[FNC1]	{data}	{data}	[FNC1]	{data}	[CR]
Aim ID	Internal ref.	Character table selection	Symbol identifier	Application identifier	data	separator	data	Carriage return
Prefix		Code128 Character	Code128 Character	GS1-128 num. value		Code128 Character		Control Character / Suffix
Visible Output in a keyboard mode								
[C1]				8100	712345	[GS]	211234567	<CR>
	Internal	Internal	Internal			invisible		invisible

NOTE:

- Most recent user guides no longer mention 128FNC. (RMVFNC is often found near Data editing / pre-suffix)
- Certain products may by default not transmit [GS] characters in keyboard modes, or not support RMVFNC nor 128FNC, depending on their legacy origin. *(traditional HSM functionality)*
- The RMVFNC command only applies to the data and does not affect the Code ID, Aim ID or <CR> <LF> which is added as a prefix or suffix and therefore isn't real part of the data, nor affect the Code128 character set switching.