Appendix B – Check Character Calculations

B.1.0 Check Character Calculations

Be sure to use the Modulo 43 calculation when using the HIBC LIC data structures, whether Code 39 or Code 128 is used.

B.2.0 HIBC LIC Check Character Modulo 43 Generator

Each of the HIBC LIC Standard data structures employs a Modulo 43 Check Character for additional data security. The Check Character is the Modulo 43 sum of all the character values in a given message, and is printed as the last character in a given message, preceding the Stop Character. Leading and trailing asterisk "*" characters in the human-readable interpretation are not used in calculating the Check Character and are only represented in the human-readable interpretation. Check Character generation is illustrated by the following example with the table below:

Supplier Labeling Data Structure: + A 1 2 3 B J C 5 D 6 E 7 1
Sum of values: 41+10+1+2+3+11+19+12+5+13+6+14+7+1 = 145

Divide 145 by 43. The quotient is 3 with a remainder of 16. The Check Character is the character corresponding to the value of the remainder (see table below), which in this example is 16, or "G". The complete Supplier Labeling Data Structure, including the Check Character, would therefore be:

+ A 1 2 3 B J C 5 D 6 E 7 1 G

**Table of numerical value assignments for computing
the HIBC LIC data format Check Character**

Table B1

0 = 0	F = 15	U = 30
1 = 1	G = 16	V = 31
2 = 2	H = 17	W = 32
3 = 3	I = 18	X = 33
4 = 4	J = 19	Y = 34
5 = 5	K = 20	Z = 35
6 = 6	L = 21	- = 36
7 = 7	M = 22	. = 37
8 = 8	N = 23	Sp = 38
9 = 9	O = 24	$ = 39
A = 10	P = 25	/ = 40
B = 11	Q = 26	+ = 41
C = 12	R = 27	% = 42
D = 13	S = 28	
E = 14	T = 29	

Note: The character corresponding to 36 is a dash or minus sign (ASCII decimal 45). The character corresponding to 37 is a dot or period (ASCII decimal 46). The character corresponding to 38 is a space (ASCII decimal 32).

B.2.1 Space Character Caution

The HIBC-LIC Check/Link character is **never** part of the **data message.** As such it should not normally be stored in a database or transmitted via EDI. It should be stripped away after the check and link functions have been executed. One of the possible values of the Check/Link Character is a space character (value 38). Although not recommended, if the link character must be stored or transmitted, the space character should be stored or transmitted explicitly as ASCII decimal 32 (ASCII Hex '20'). Note that some legacy systems and or software are unable to receive and or interpret trailing spaces as part of a data message.