

## How to add and validate a checksum in our 3 of 9 barcode

Table 1.1  
CODE 39 CHARACTER VALUES

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

You can add a optional check character if your application requiring higher level of data security. When use, the check character is positioned between the final data character and the stop character "Stop Char. = \*". The check character is determined as follows:

1. Using Table 1.1, determine the numerical value of each of the data characters.
2. Sum the values of all the data characters.
3. Find the modulo 43 remainder of the sum from Step 2.
4. The check character is that character whose value from table 1.1 is equal to the remainder from step 3.

For example, if the data characters are "TEST", the values would be summed as:  
 $29+14+28+29 = 100$ , 43 goes into 100 twice, with a remainder of 14. The letter "E" as a value of 14 and is therefore the check character.

### **IMPORTANT**

The checksum is not validate by the terminals, then add this validation in your software.