CHECK DIGIT CALCULATOR

HOW TO CALCULATE A DIGIT CHECK MANUALLY

ID KEY FORMAT	DIGIT POSITIONS																	
GTIN-8											N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8
GTIN-12							N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}
GTIN-13						N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}
GTIN-14					N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}
SSCC	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}	N_{15}	N_{16}	N_{17}	N_{18}
STEP 1: Multiply value of each position by																		
	x3	x1	x3	x1	x3	x1	x3	x1	x3	x1	x3	x1	x3	x1	x3	x1	x3	
STEP 2: Add results together to create sum																		
STEP 3: Subtract the sum from the nearest equal or higher multiple of ten = CHECK DIGIT																		

THE FOLLOWING TABLE GIVES AN EXAMPLE TO ILLUSTRATE HOW A CHECK DIGIT IS CALCULATED

POSITIONS	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}
NUMBER WITHOUT CHECK DIGIT	6	2	9	1	0	4	1	5	0	0	2	1	-
STEP 1: Multiply	x	x	x	x	x	x	x	x	x	x	x	x	-
By	1	3	1	3	1	3	1	3	1	3	1	3	-
STEP 2: Add results	=	=	=	=	=	=	=	=	=	=	=	=	-
to create sum	6	6	9	3	0	12	1	15	0	0	2	3	=57
STEP 3: Subtract the sum from the nearest equal or higher multiple of ten = 60 - 57 = 3 (CHECK DIGIT)													
NUMBER WITH CHECK DIGIT	6	2	9	1	0	4	1	5	0	0	2	1	3

EXAMPLE: GTIN-12 (U.P.C.)

The Check Digit for a GTIN-12 (U.P.C.) ID Number is figured using the standard modulo calculation.

Here is how it works:

NUMBERING STRUCTURE POSITIONS

STEP	1	2	3	4	5	6	7	8	9	10	11	12
1	6	1	4	1	4	1	2	1	0	2	2	
2	6	1	4	1	4	1	2	1	0	2	2	
3	Multiply the result of Step Two by three: (18x3=54)											
4	6	1	4	1	4	1	2	1	0	2	2	
5	Add the results of Step Three and Step Four: (54+6=60)											
6	6	1	4	1	4	1	2	1	0	2	2	0

STEP ONE:
Suppose you want to find the Check Digit for the GTIN-12 (U.P.C.) Number 61414121022. Set up a table with 12 columns, and put the number 61414121022 into Positions One through Eleven. Position Twelve will be blank because it is reserved for the Check Digit.

STEP TWO:
Add the numbers in Positions One, Three, Five, Seven, Nine, and Eleven: (6+4+4+2+0+2=18)

STEP THREE:
Multiply the result of Step Two by three: (18x3=54)

STEP FOUR:
Add the numbers in Positions Two, Four, Six, Eight, and Ten: (1+1+1+1+2=6)

STEP FIVE:
Add the results of Step Three and Step Four: (54+6=60)

STEP SIX:
The Check Digit is the smallest number needed to round the result of Step Five up to the nearest multiple of 10. In this example, the Check Digit is 0.