ASCII Code Table

HEX	DEC	CHR	Ctrl	HEX	DEC	CHR	HEX	DEC	CHR	HEX	DEC	CHR
00	0	NUL	^@	20	32	SP	40	64	@	60	96	`
01	1	SOH	^A	21	33	!	41	65	A	61	97	a
02	2	STX	^B	22	34	”	42	66	B	62	98	b
03	3	ETX	^C	23	35	#	43	67	C	63	99	c
04	4	EOT	^D	24	36	$	44	68	D	64	100	d
05	5	ENQ	^E	25	37	%	45	69	E	65	101	e
06	6	ACK	^F	26	38	&	46	70	F	66	102	f
07	7	BEL	^G	27	39	’	47	71	G	67	103	g
08	8	BS	^H	28	40	(	48	72	H	68	104	h
09	9	HT	^I	29	41	)	49	73	I	69	105	I
0A	10	LF	^J	2A	42	*	4A	74	J	6A	106	j
0B	11	VT	^K	2B	43	+	4B	75	K	6B	107	k
0C	12	FF	^L	2C	44	,	4C	76	L	6C	108	l
0D	13	CR	^M	2D	45	-	4D	77	M	6D	109	m
0E	14	SO	^N	2E	46	.	4E	78	N	6E	100	n
0F	15	SI	^O	2F	47	/	4F	79	O	6F	111	o
10	16	DLE	^P	30	48	0	50	80	P	70	112	p
11	17	DC1	^Q	31	49	1	51	81	Q	71	113	q
12	18	DC2	^R	32	50	2	52	82	R	72	114	r
13	19	DC3	^S	33	51	3	53	83	S	73	115	s
14	20	DC4	^T	34	52	4	54	84	T	74	116	t
15	21	NAK	^U	35	53	5	55	85	U	75	117	u
16	22	SYN	^V	36	54	6	56	86	V	76	118	v
17	23	ETB	^W	37	55	7	57	87	W	77	119	w
18	24	CAN	^X	38	56	8	58	88	X	78	120	x
19	25	EM	^Y	39	57	9	59	89	Y	79	121	y
1A	26	SUB	^Z	3A	58	:	5A	90	Z	7A	122	z
1B	27	ESC		3B	59	;	5B	91	[	7B	123	{
1C	28	FS		3C	60	<	5C	92	\	7C	124	|
1D	29	GS		3D	61	=	5D	93	]	7D	125	}
1E	30	RS		3E	62	>	5E	94	^	7E	126	~
1F	31	US		3F	63	?	5F	95	_	7F	127	DEL

ASCII-Encoded Decimal To Binary Conversion

- Subroutine DECBIN, assumes A0 to point at the highest character of a valid five character ASCII-encoded decimal number with a maximum value 65535
- The decimal number is converted to a one word binary value stored in the low word of D0

```
         ORG       $1000
DECBIN   CLR.L     D0
         MOVEQ     #5,D6        Initialize loop counter to get five digits
NEXTD    CLR.L     D1           Clear new digit holding register
         MOVE.B    (A0)+,D1     Get one ASCII digit from memory
         SUBI.B    #$30,D1      Subtract ASCII bias $30
         MULU      #10,D0       Multiply D0 by 10
         ADD.W     D1,D0        Add new digit to binary value in D0
         SUBI.B    #1,D6        Decrement counter
         BNE       NEXTD        If not done get next digit
         RTS
```

Binary To ASCII-Coded Decimal Conversion

- Subroutine BINDEC, converts binary value in the lower word of register D0 into an ASCII-coded decimal string. Address where resulting ASCII string should be stored is given in A0
- This routine does not eliminate leading zeroes when the value is less than 10000

```
             ORG             $1000
BINDEC       MOVE.W          D0,D6              Make a copy of input number
             MOVE.W          #10000,D5           Get 10000s digit
             BSR             DIGIT
             MOVE.W          #1000,D5           Get  1000s digit
             BSR             DIGIT
             MOVE.W          #100,D5            Get  100s digit
             BSR             DIGIT
             MOVE.W          #10,D5             Get  10s digit
             BSR             DIGIT
             MOVE.B          D6,D1              Get 1s digit
            ADDI.B           #$30,D1            Add ASCII bias
            MOVE.B           D1,(A0)+           Store  1s ASCII digit in memory
            RTS
DIGIT       ANDI.L           #$0FFFF,D6         Clear upper word of D6
            DIVU             D5,D6              Divide D6 by D5
            MOVE.B           D6,D1              Load result digit in D1
            ADDI.B           #$30,D1            Add ASCII bias
            MOVE.B           D1,(A0)+           Store ASCII digit in memory
            SWAP             D6                 Get remainder
            RTS
```