


MCOB22005AX-EYP	2 x 20	Euro/Jap/Cyrillic	OLED Module
Specification			
Version: 1		Date: 24/07/2013	
Revision			
1	22/07/2013	First Issue	

Display Features			
Character Count	2 x 20		
Appearance	Yellow on Black		
Logic Voltage	5V		
Interface	Parallel		
Font Set	English / European / Cyrillic		
Character Height	5.57 mm		
Module Size	116.00 x 37.00 x 9.00 mm		
Operating Temperature	-40°C ~ +85°C		
Construction	COB		
		Box Quantity	Weight / Display
		---	---

DESIGN • MANUFACTURE • SUPPLY

Display Accessories	
Part Number	Description

Optional Variants	
Appearance	Voltage



Functions and Features

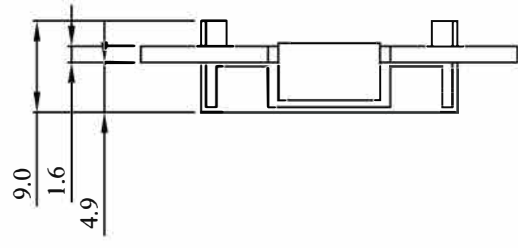
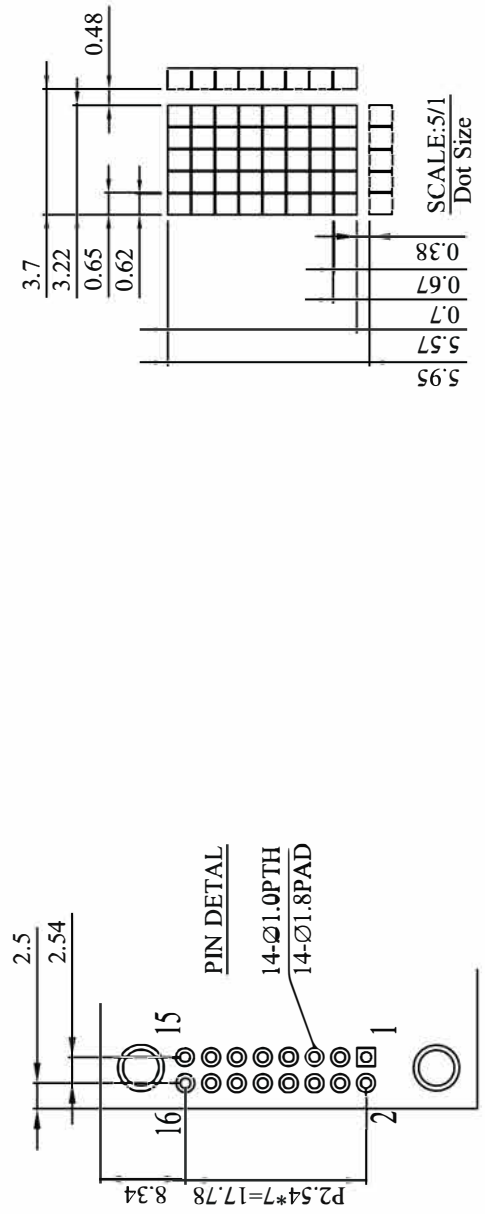
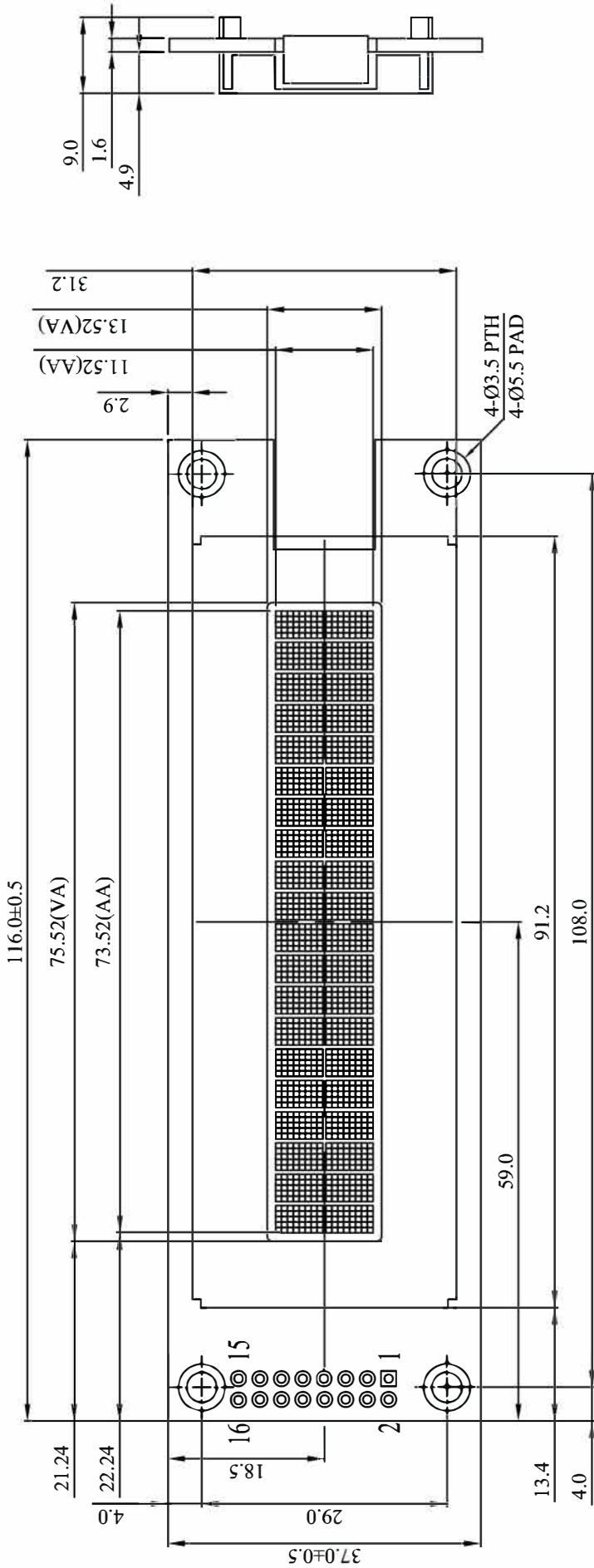
- 2 lines x 20 characters
- Built-in controller
- Parallel or serial MPU interface (Default 6800 MPU parallel)
- +2.8V ~ +5.3V Power Supply
- viewing angle "Free"
- Wide Temperature -40°C ~ +80°C (Operating)
- Sunlight Readable Technology
- RoHS compliant

Mechanical Specification

Item	Description	
Product No.	MCOB22005AX-EYP	
Viewing Area	75.52(W)×13.52(H)	mm
Module Size	116.0(W)×37.0(H)×9.0 (D)	mm
Dot Size	0.62(W)×0.67(H)	mm
Dot Pitch	0.65(W)×0.70(H)	mm
Display Format	20 characters (W)×2 lines (H)	
Duty Ratio	1/16	Duty
Controller	SSD1311 or Equivalent	
Interface	6800 (Default) 8Bit 8080 (Option) SPI (Option) I2C (Option)	



PIN NO.	SYMBOL
1	VSS
2	VDD
3	V _o
4	RS
5	R/W#
6	E
7-14	DB0-7
15-16	NC



Drawing Number		Rev	
		A	
MODEL		MCOB22005AX-EYP	
TITLE		OLED Module Drawing	
Projection Type	Tolerance	Dimension	±0.3
		Unit	mm
Drawn	Checked	Approved	PM
By	Eco-2048	Eco-1500	Eco-0150
Note	2048.00	1500.00	0150.00
			0097.00

Pin Description

Parallel Interface (default):

Pin No.	Symbol	External Connection	Description
1	VSS	Power Supply	Ground
2	VDD	Power Supply	Supply Voltage for OLED and logic
3	Vo	-	Contrast Adjustment
4	RS(D/C#)	MPU	Register select signal. H: DATA, L: Command
5	R/W# (WR#)	MPU	6800-interface: Read/Write select signal, R/W=1: Read R/W: =0: Write 8080-interface: Active LOW Write signal.
6	E or /RD	MPU	6800-interface: Operation enable signal. Falling edge triggered. 8080-interface: Active LOW Read signal.
7-14	DB0~DB7	MPU	8-bit Bi-directional data bus lines
15-16	NC	-	No Connect



DC Characteristics

Item	Symbol	Condition	Min.	Type	Max.	Unit
Power Supply for Logic	VDD	(Wide Voltage I/O Application)	2.8	5.0	5.3	Volt
Input Voltage for I/O Pins	V _i	(Wide Voltage I/O Application)	2.8	5.0	5.3	Volt
Input Voltage	V _{IL}	L level	0	-	0.2 VDD	Volt
Input Voltage	V _{IH}	H level	0.8 VDD	-	VDD	Volt
Output Voltage	V _{OL}	L level	0	-	0.1 VDD	
Output Voltage	V _{OH}	H level	0.9 VDD	-	VDD	
Power Supply Current for OLED	I _{DD}	Note	-	30		mA
Sleep Mode Current for VDD	I _{DD,SLEEP}			1	10	μA

Note:

VDD = 5.0V, 25% Display Area Turn on. 100 cd/m²

When random texts pattern is running , averagely , about 1/4 of pixels will be on.



Optical Characteristics

Item	Symbol	Min.	Typ	Max.	Unit
Viewing angle range			Free		Degree
Dark Room Contrast	Cr		>10,000:1		
Brightness	Lbr		125		cd/m ²
Peak Emission Wavelength	C.I.E 1931	X=0.46 Y=0.45	X=0.50 Y=0.49	X=0.54 Y=0.53	



Electrical Absolute Ratings

Item	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply for Logic	VDD	-0.3	5.0	5.5	Volt	1,2
Input Voltage for I/O Pins	VI	-0.3	5.0	5.5	Volt	1,2
Life Time (100 cd/m ²)		---	100,000	---	Hours	3

Note 1: All the above voltages are on the basis of "VSS = 0V".

Note 2: When this module is used beyond the above absolute maximum ratings, permanent breakage of the module may occur.

Note 3: Ta = 25°C, 25% Checkerboard.

Software configuration follows Section ACTUAL APPLICATION EXAMPLE Initialization.

End of lifetime is specified as 50% of initial brightness reached. The average operating lifetime at room temperature is estimated by the accelerated operation at high temperature conditions.



POWER SUPPLY

Adjust Brightness by Software & Hardware(VR)

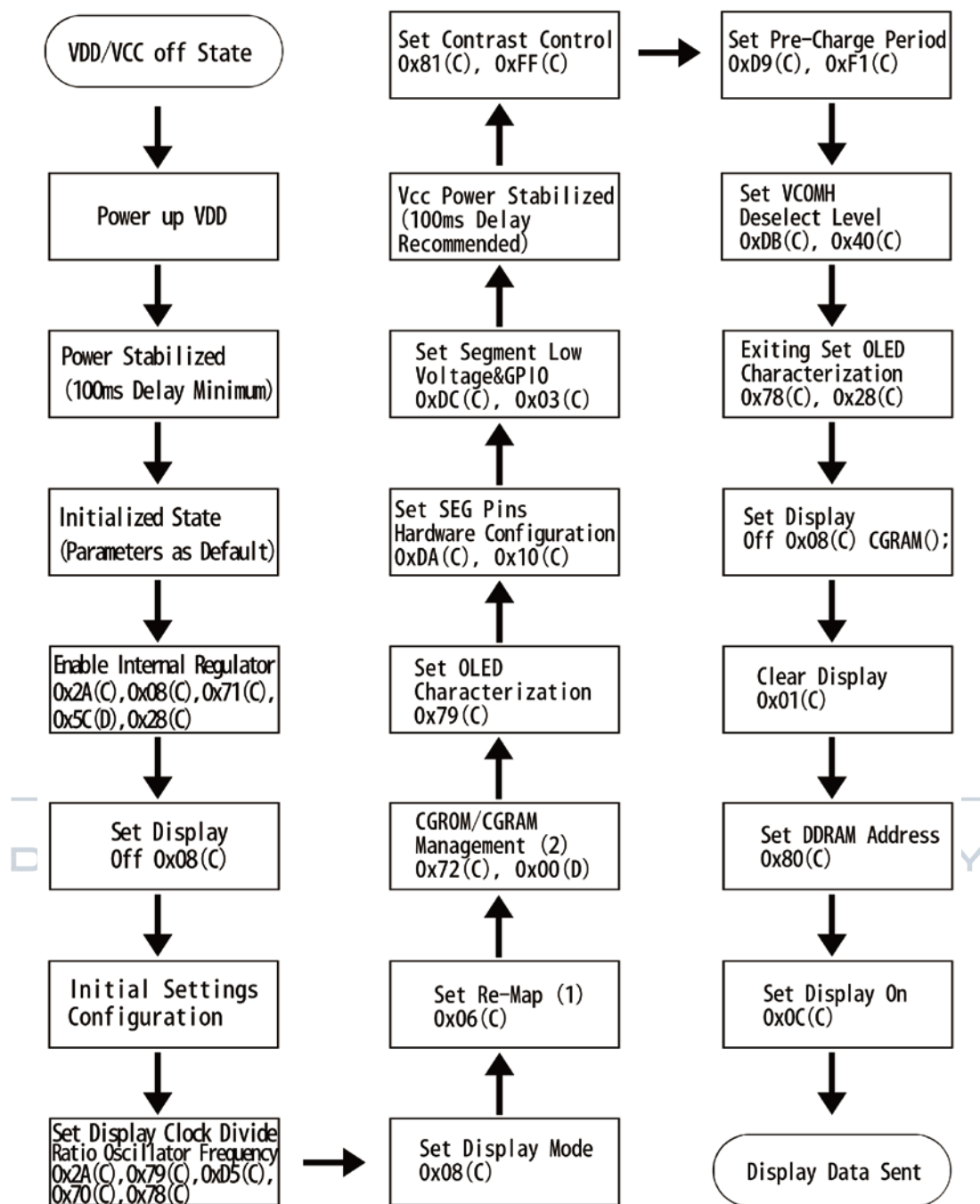
Adjust Brightness by Software(Only)

DESIGN • MANUFACTURE • SUPPLY



Application

Power up Sequence



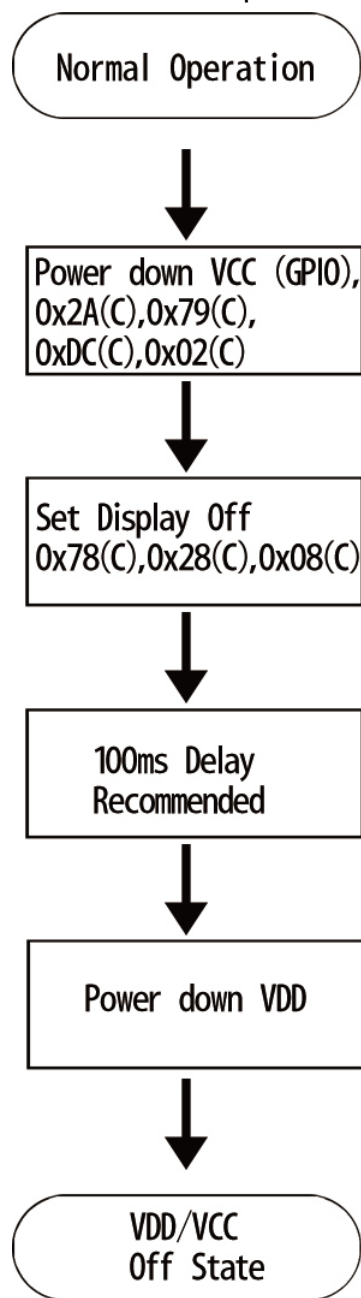
(1) This command could be programmable or defined by pin configuration.

(2) This command could be programmable or defined by pin configuration.

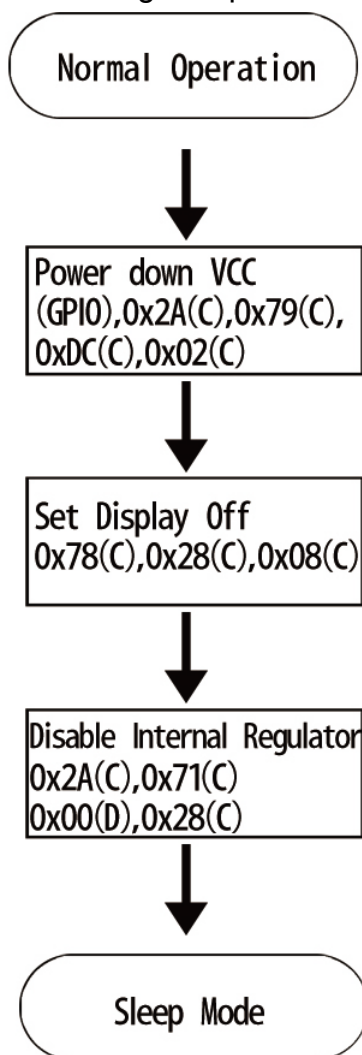
※ (C) : Write Command ※ (D) : Write Data

If the noise is accidentally occurred at the displaying window during the operation, please reset the display in order to recover the display function.

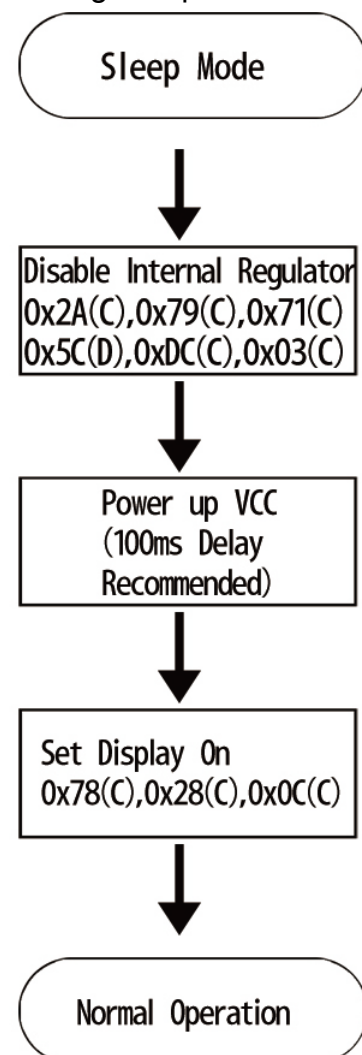
Power down Sequence



Entering Sleep Mode



Exiting Sleep Mode



SSD1311 CGROM CHARACTER CODE

ROM A

b7-4 \ b3-0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000																
0001	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	■
0010	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
0011	0	1	2	3	4	5	6	7	8	9	*	+	<	=	>	?
0100	A	B	C	D	E	F	G	H	I	J	K	L	N	O		
0101	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
0110	a	b	c	d	e	f	g	h	i	j	k	l	n	o		
0111	F	a	r	s	t	u	v	w	x	y	z	A	B	C	D	E
1000	0	1	2	3	4	5	6	7	8	9	*	+	<	=	>	?
1001	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆
1010	0	1	2	3	4	5	6	7	8	9	*	+	<	=	>	?
1011	0	1	2	3	4	5	6	7	8	9	*	+	<	=	>	?
1100	⌈	⌋	⌌	⌍	⌎	⌏	⌐	⌑	⌒	⌓	⌔	⌕	⌖	⌗	⌘	⌙
1101	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1110	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇	⬅	⬆	⬇
1111	0	1	2	3	4	5	6	7	8	9	*	+	<	=	>	?

PLY



ROM B

b7-4	b3-0															
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000																
0001	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
0010	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
0011	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
0100	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
0101	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
0110	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
0111	p	q	r	s	t	u	v	w	x	y	z	{		}	~	:
1000	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1001	Ð	Œ	Ÿ	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì
1010	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1011	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1100	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1101	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1110	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
1111	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø



ROM C

		b3-0				b7-4											
		0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000		!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
0001		0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	
0010		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
0011		P	Q	R	S	T	U	V	W	X	Y	Z	[]	^	_	
0100		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
0101		p	q	r	s	t	u	v	w	x	y	z	{		}	~	
0110		!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
0111		0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	
1000		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1001		P	Q	R	S	T	U	V	W	X	Y	Z	[]	^	_	
1010		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
1011		p	q	r	s	t	u	v	w	x	y	z	{		}	~	
1100		!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
1101		0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	
1110		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1111		P	Q	R	S	T	U	V	W	X	Y	Z	[]	^	_	

