

# GT30L24A3W

Multi Language Dot Matrix Font Chip



DATASHEET

V 1.0I\_C  
2017-5

## Revision History

Version Number	Modify Content	Date	Remark
V 1.0I_A	Font Specification Developed	2013-11	
V 1.1I_A	Change The Font Type From The GT24L24A3W To GT30L24A3W	2013-12	
V 1.0I_C	Update the font AC / DC parameters	2017-05	

# INDEX

<b>1 General Description.....</b>	<b>4</b>
1.1 Font Feature.....	4
1.2 Chip Description.....	5
1.3 Chip Content.....	6
1.4 SPI Connection Block Diagram.....	8
<b>2 Operating Instruction.....</b>	<b>9</b>
2.1 Instruction Parameter.....	9
2.2 Read Data Bytes (General read) .....	9
2.3 Read Data Bytes at Higher Speed (Fast read lattice data) .....	10
2.4 Reading Chip Command sequence is as follows (Figure).....	11
2.8Deep sleep mode instruction (B9H).....	11
2.9Wake up deep sleep mode instruction (ABH).....	11
<b>3 Electrical Characteristics.....</b>	<b>12</b>
3.1 Absolute Maximum Ratings.....	12
3.2 DC Characteristics.....	12
3.3 AC Characteristics.....	12
<b>4 Operating Instruction.....</b>	<b>14</b>
<b>5 font configuration (transverse horizontal).....</b>	<b>15</b>
5.1 Character Dot Matrix Arrangement(Data Arrangement Format).....	15
5.2 15X16.....	15
5.3 16 Dot Matrix Proportional Adjusted Font.....	15
<b>6 Dot Data Validation (Customer Reference).....</b>	<b>17</b>
<b>7 Appendix.....</b>	<b>18</b>
7.1 Font Sample.....	18
7.2 180Total Foreign Text Database Table.....	40
7.3 180 Foreign text pinyin index table (Pinyin ordering).....	45
180 Foreign text pinyin index table (Pinyin ordering).....	45
7.4 Total Foreign Text Database Table (The English alphabetical order) .....	48

# 1 General Description

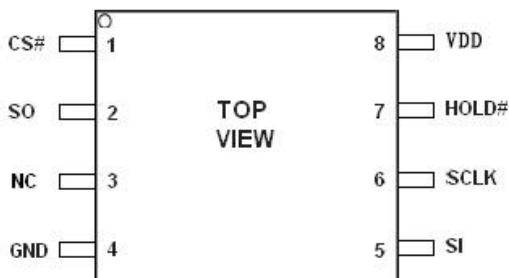
GT30L24A3W is a matrix containing 12, 16 and 24 dot matrix font chip, support GB18030 simplified and traditional Chinese characters, 180 foreign languages character JIS0208 Japanese character, KSC5601 Korean character sets, compatible with a variety of text above the Unicode character set .The user may obtain the address of certain character dot matrix with the calculation method given by this data sheet, which enables the user to access to more character data by continually reading from the address already obtained.

## 1.1 Font Feature

- Bus Interface: SPI
- Data Arrangement: Transverse horizontal
- Frequency: 50MHz(max.) @3.3V
- Operating Voltage: 2.7V~3.6V
- Current:
  - Operating: 5 -15mA
  - Sleep current: 1-5uA
- Operating Temperature: -40°C~85°C
- Package: SOP-8B
- Character set:
  - GB18030Jane traditional
  - KSC5601Korean
  - JIS0208Japanese
  - 180 foreign language
  - Support Chinese、Japanese、Korean and The multinational Unicode
  - IS08859 CODE PAGE
- Font Size:
  - Chinese Font Size: 12dot、16dot、24dot
  - The multinational Font Size: 16dot、24dot

## 1.2 Chip Description

**SOP8-B**



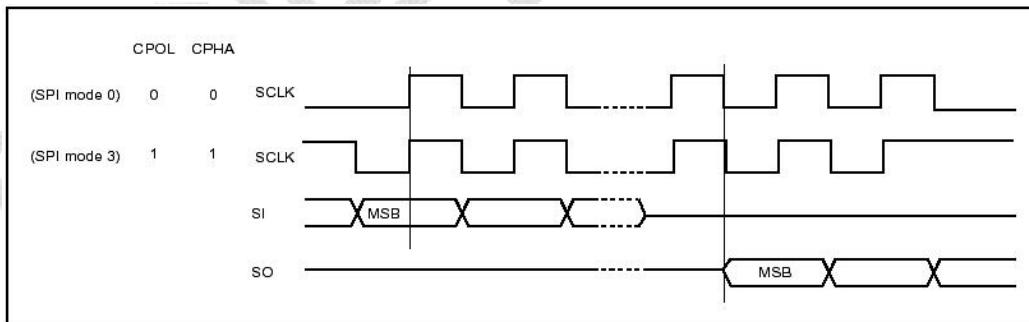
SOP8	Name	I/O	Description
1	CS#	I	片选输入 (Chip enable input)
2	SO	O	串行数据输出 (Serial data output)
3	NC		悬空 (Vacant)
4	GND		地(Ground)
5	SI	I	串行数据输入 (Serial data input)
6	SCLK	I	串行时钟输入 (Serial clock input)
7	HOLD#	I	总线挂起 (Hold, to pause the device without)
8	VDD		电源(+ 3.3V Power Supply)

**Serial data output(SO):** Data is shifted out on the falling edge of the serial clock.

**Serial data input(SI) :** Inputs are latched on the rising edge of the serial clock.

**Serial clock input(SCLK):** To provide the timing of the serial interface.

**Chip enable input(CS#):** The device is enabled by a high to low transition on CS#. CS# must remain low for the duration of any command sequence.

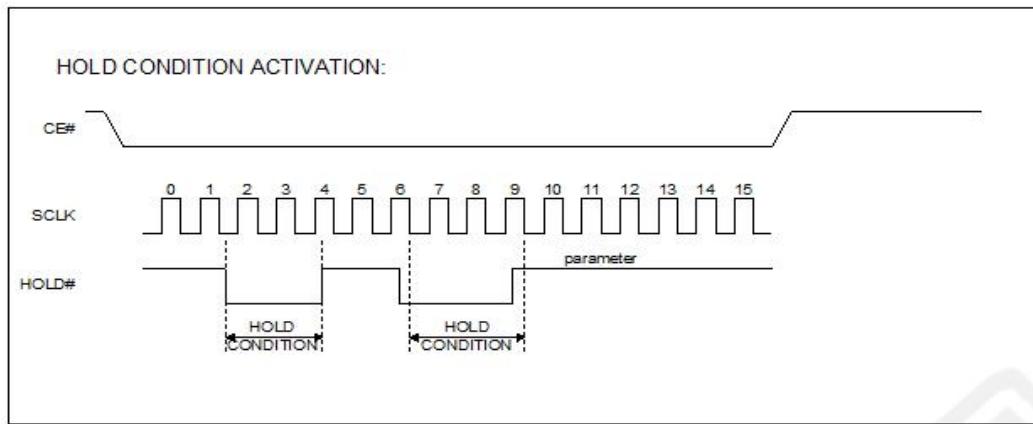


### Pending Input Bus (HOLD#) :

This signal is used to suspend the effective chip select signals during data transfer during a bus hang, serial data output signal is in a high impedance state, not the chip serial data input signal and the serial clock signal response.

When the HOLD # signal goes low and the serial clock signal (SCLK) is low, the bus enters the suspend state.

When the serial clock signal (SCLK) HOLD # signal goes high and the time is low and the bus suspend.



注：以上所有简码的全称分别为：G 码为 GB1

### 1.3 Chip Content

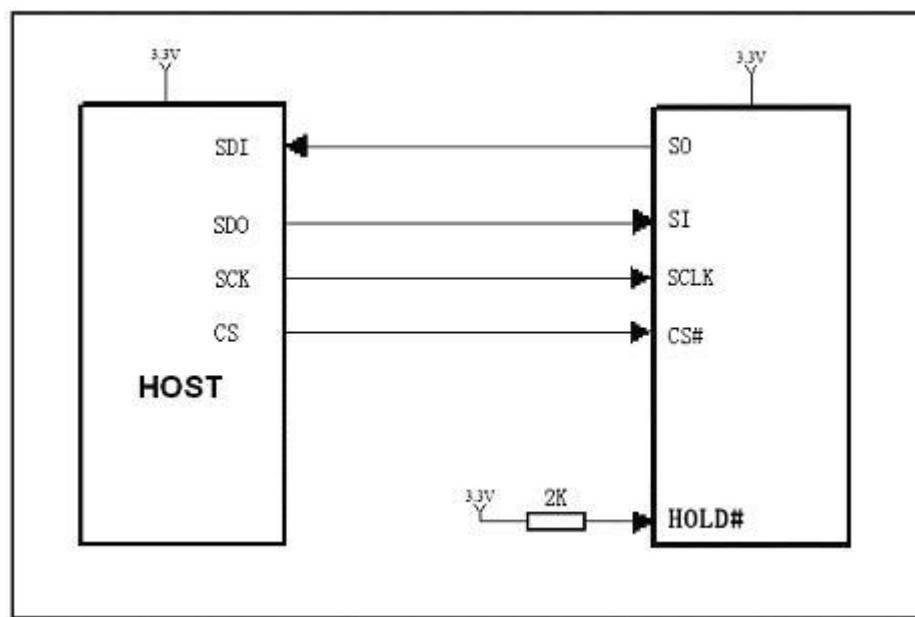
Character Set	Font	Font Size	Number of characters	Fonts	Arrangement
ASCII	ASCII	5x7	96	Standard	W
	ASCII	7x8	96	Standard	W
	ASCII	6x12	96	Standard	W
	ASCII	6x12Spread	32	Standard	W
	ASCII	8x16	96	Bold	W
	ASCII	8X16spread	128	Standard	W
	ASCII	12X24spread	128	Standard	W
	ASCII	12x24	224	Print Font	W
	ASCII	16x32C	96	Bold	W
	ASCII	12dotA	96	Rounded font	W
	ASCII	16dotA	96	Rounded font	W
	ASCII	24dotA	96	Rounded font	W
	ASCII	32dotA	96	Rounded font	W
GB Chinese	GB2312 Chinese+symbol	11x12	6763+361	Song typeface	W
	GB2312Chinese+symbol	15x16	6763+361	Song typeface	W
	GB18030Chinese+character	24x24	27538+1013	Hei Ti	W
Trans coding table	U→GBK				W
	B→GBK				W
Japanese Korean	Shift pseudonym	8x16	63	Standard	W
	Shift pseudonym	12x24	63	Standard	W
	JIS Kanji+Kanji	16x16	6398+1363	Standard	W
	KSC letter	16x16	3,465	Standard	W
	KSC letter	24x24	3,465	Standard	W
	U→JIS table				W
	SHIFT-JIS table				
	U→KSC table				W
foreign language	Latin-based characters	8x16	496	Standard	W

CODE PAGE	Department of Greek characters	16dot proportional adjusted	496	Standard	W
		12x24	496	HeiTi	W
	Text of the Cyrillic alphabet	8x16	96	Standard	W
		16dot proportional adjusted	96	Standard	W
		12x24	96	HeiTi	W
	Department of Hebrew characters	8x16	208	Standard	W
		16dot proportional adjusted	208	Standard	W
	Thai Text of the character	12x24	208	HeiTi	W
		8x16	163	Standard	W
	Arabic	16dot proportional adjusted	163	HeiTi	W
		24dot proportional adjusted	128	Standard	W
	Hindi	16dot proportional adjusted	578	Standard	W
		24dot proportional adjusted	578	Standard	W
	Khmer	16dot proportional adjusted	130	Standard	W
		24dot proportional adjusted	156	Standard	W
	437—USA,Standard Europe	12x24	256	Print Font	W
	737—Greek	12x24	256	Standard	W
	775—Baltic	12x24	256	Print Font	W
	850—Multilingual	12x24	256	Print Font	W
	852—Latin 2	12x24	256	Print Font	W
	855—Cyrillic	12x24	256	Print Font	W
	857—Turkish	12x24	256	Print Font	W
	858—Euro	12x24	128	Print Font	W
	860—Portuguese	12x24	256	Print Font	W
	862—Hebrew	12x24	256	Standard	W
	863—Canadian French	12x24	256	Print Font	W
	864—Arabic	24dot proportional adjusted	256	Standard	W
	865—Nordic	12x24	256	Print Font	W
	866—Cyrillic 2	12x24	256	Print Font	W
	1251—Cyrillic	12x24	256	Print Font	W
	1252—Latin 1	12x24	256	Print Font	W
	1253—Greek	12x24	256	Standard	V
	1254—Turkish	12x24	256	Print Font	W
	1255—Hebrew New	12x24	256	Standard	W
	1256—Arabic	24dot proportional adjusted	256	Standard	W
	1257—Baltic	12x24	256	Print Font	W
	928—Greek	12x24	96	Standard	W
	Hebrew old	12x24	96	Standard	W
	International character	12X24	132	Print Font	W
	katakana	24X24	32	Print Font	W
	katakana	12X24	64	Print Font	W

Remark: Stands for all of the above are simple code: G code is GB18030 code, U code is UNI CODE code, B code BIG5 code, J code JIS0208 Japanese code, K code KSC5601 Korean yards

## 1.4 SPI Connection Block Diagram

SPI host interface circuit connection can refer to the following figure (#HOLD pin pulled recommend pick 2K resistor 3.3V).



SPI interface with host interface reference circuit schematic

## 2 Operating Instruction

### 2.1 Instruction Parameter

Instruction	Description	Instruction Code(One-Byte)		Address Bytes	Dummy Bytes	Data Bytes
READ	Read Data Bytes	0000 0011	03 h	3	—	1 to $\infty$
FAST_READ	Read Data Bytes at Higher Speed	0000 1011	0B h	3	1	1 to $\infty$

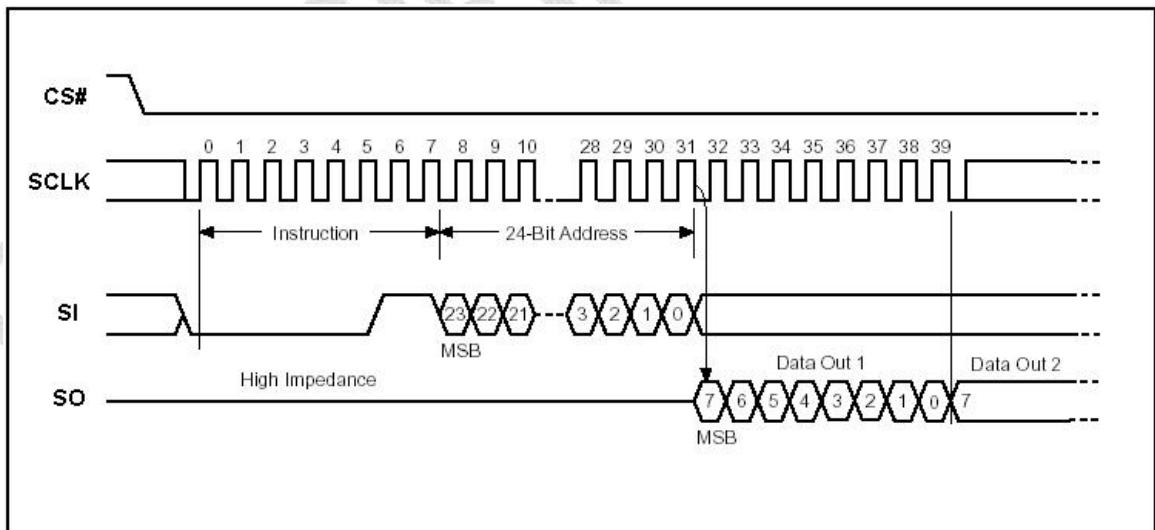
All operations of the chip SPI interface, only two, that is, Read Data Bytes (READ "general reading") and Read Data Bytes at Higher Speed (FAST\_READ "quickly read the dot data").

### 2.2 Read Data Bytes (General read)

The Read instruction supports up to 20 MHz, It outputs the data starting from the specified address location. The data output stream is continuous through all addresses until terminated by a low to high transition on CE#. The internal address pointer will automatically increment.

The Read instruction is initiated by executing an 8-bit command,03H, followed by address bits[A23-A0]. CE# must remain active low for the duration of the Read cycle.

图：Read Data Bytes (READ) Instruction Sequence and Data-out sequence:

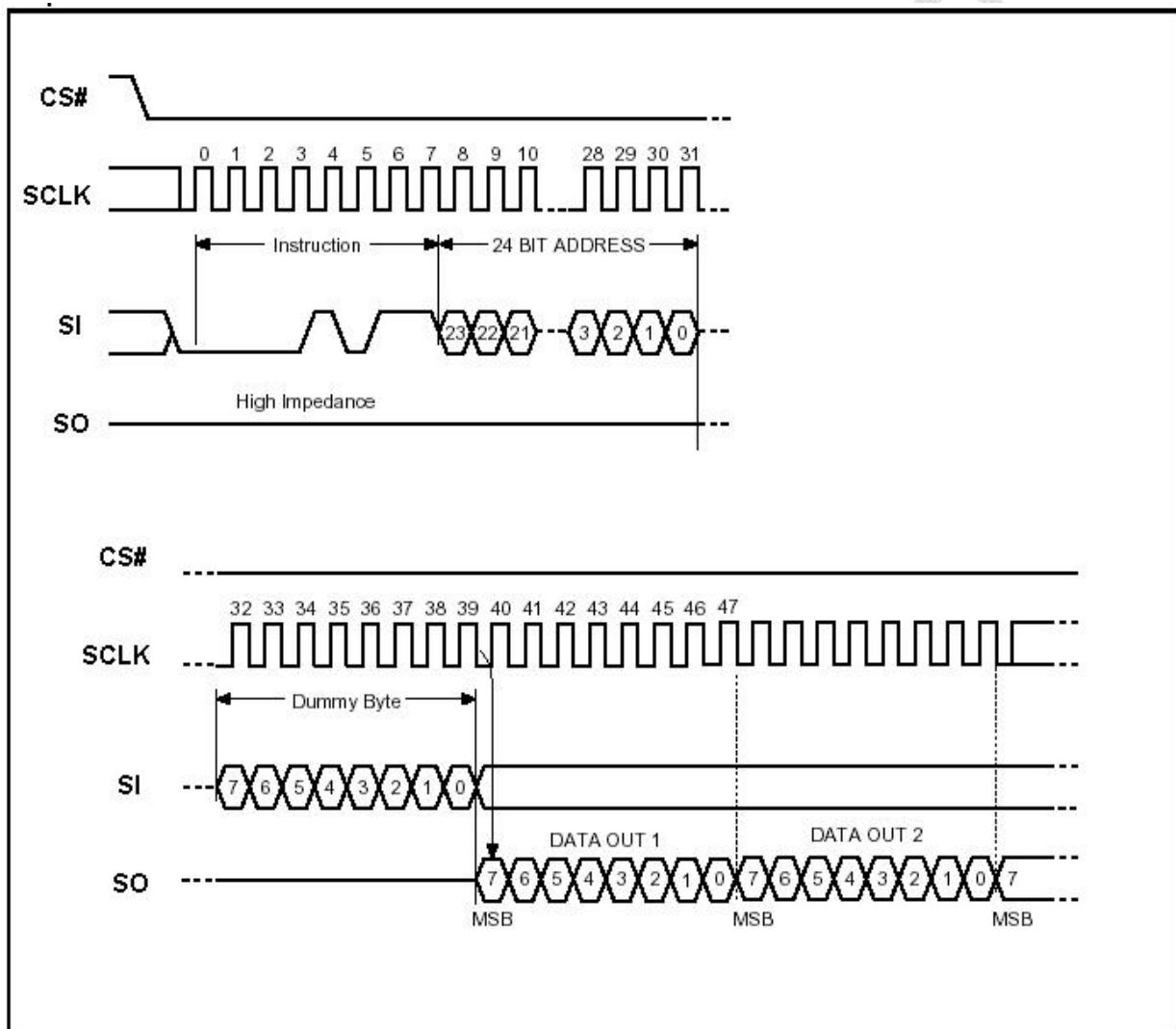


## 2.3 Read Data Bytes at Higher Speed (Fast read lattice data)

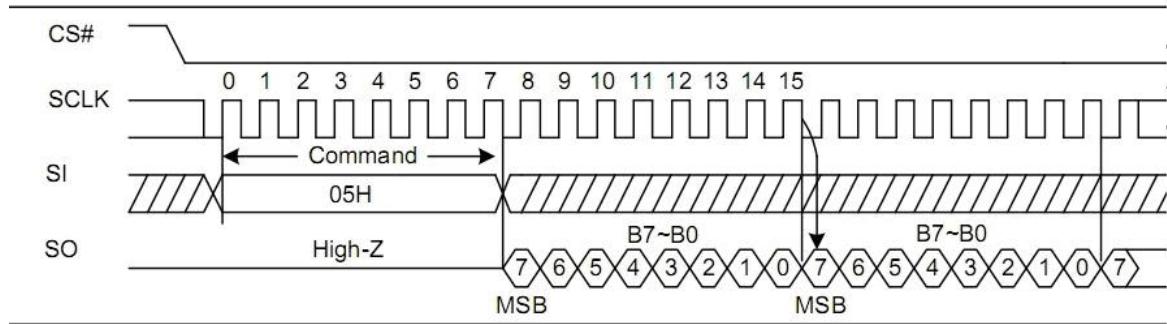
The High-Speed-Read instruction supporting up to 30 MHz is initiated by executing an 8-bit command, 0BH, followed by address bits [A23-A0] and a dummy byte. CE# must remain active low for the duration of the High-Speed-Read cycle.

Following a dummy byte (8 clocks input dummy cycle), the High-Speed-Read instruction outputs the data starting from the specified address location. The data output stream is continuous through all addresses until terminated by a low to high transition on CE#. The internal address pointer will automatically increment.

Figure: Read Data Bytes at Higher Speed (READ\_FAST) Instruction Sequence and Data-out sequence:



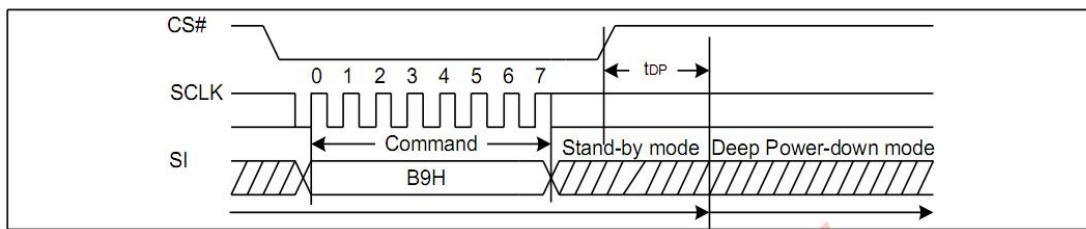
## 2.4 Reading Chip Command sequence is as follows (Figure)



## 2.8 Deep sleep mode instruction (B9H)

Once the character chip goes into deep sleep mode, all commands will be ignored, except for the wake-up depth sleep mode command. First, the CS# is low, and the B9H command is input, and then CS# becomes high and lasts TDP of time ( $T_{DP}=25\mu s$ ). In the duration of the TDP, the font chip goes into deep shutdown mode.

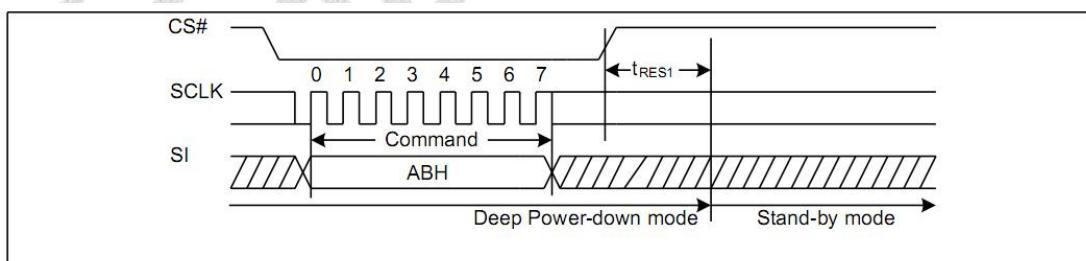
Timing waveform of deep sleep mode instructions



## 2.9 Wake up deep sleep mode instruction (ABH)

First, CS# is low, sending ABH instructions to the font chip, and then CS# becomes high and lasts  $T_{RES1}$  of time ( $T_{RES1}=25\mu s$ ). The font chip will return to normal operation, and the CS# pin must remain high in  $T_{RES1}$  time.

Timing waveforms for awakening deep sleep mode instructions



### 3 Electrical Characteristics

#### 3.1 Absolute Maximum Ratings

Symbol	Parameter	Min.	Max.	Unit	Condition
$T_{OP}$	Operating Temperature	-40	85	°C	
$T_{STG}$	Storage Temperature	-65	150	°C	
$V_{DD}$	Supply Voltage	-0.3	3.6	V	
$V_{IN}$	Input Voltage	-0.3	$V_{DD}+0.3$	V	
GND	Power Ground	-0.3	0.3	V	

#### 3.2 DC Characteristics

Condition:  $T_{OP} = -40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ , GND=0V

Symbol	Parameter	Min.	Max.	Unit	Condition
$I_{DD}$	VDD Supply Current(active)	5	15	mA	
$I_{SB}$	VDD Standby Current	5	15	uA	/CS=VDD, $V_{IN}=VDD$ or VSS
$I_{cc2}$	Deep Power-Down Current	1	5	uA	/CS=VDD, $V_{IN}=VDD$ or VSS
$V_{IL}$	Input LOW Voltage	-0.5	0.2VDD	V	VDD=2.7~3.6V
$V_{IH}$	Input HIGH Voltage	0.7VDD	$VDD+0.4$	V	
$V_{OL}$	Output LOW Voltage		0.4 ( $I_{OL}=1.6\text{mA}$ )	V	
$V_{OH}$	Output HIGH Voltage	VDD-0.2 ( $I_{OH}=-100\text{uA}$ )		V	
$I_{LI}$	Input Leakage Current	0	$\pm 2$	uA	
$I_{LO}$	Output Leakage Current	0	$\pm 2$	uA	

Note:  $I_{IL}$ : Input LOW Current,  $I_{IH}$ : Input HIGH Current,

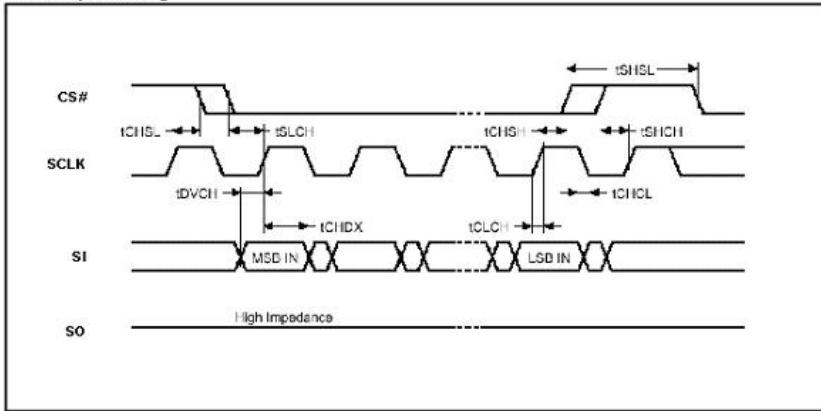
$I_{OL}$ : Output LOW Current,  $I_{OH}$ : Output HIGH Current,

#### 3.3 AC Characteristics

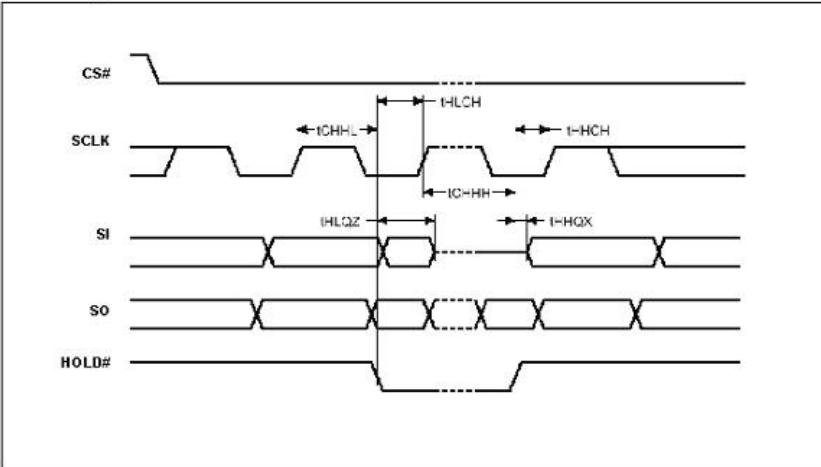
Symbol	Alt.	Parameter	Min.	Max.	Unit
$F_c$	$F_c$	Clock Frequency	D.C.	50	MHz
$t_{CH}$	$t_{CLH}$	Clock High Time	4		ns
$t_{CL}$	$t_{CLL}$	Clock Low Time	4		ns
$t_{CLCH}$		Clock Rise Time(peak to peak)	0.2		V/ns
$t_{CHCL}$		Clock Fall Time (peak to peak)	0.2		V/ns
$t_{SLCH}$	$t_{CSS}$	CS# Active Setup Time (relative to SCLK)	5		ns
$t_{CHSL}$		CS# Not Active Hold Time (relative to SCLK)	5		ns
$t_{DVCH}$	$t_{DSU}$	Data In Setup Time	2		ns
$t_{CHDX}$	$t_{DH}$	Data In Hold Time	5		ns

t CHSH		CS# Active Hold Time (relative to SCLK)	5		ns
t SHCH		CS# Not Active Setup Time (relative to SCLK)	5		ns
t SHSL	tCSH	CS# Deselect Time	20	130	ns
t SHQZ	tDIS	Output Disable Time		7	ns
t CLQV	tV	Clock Low to Output Valid		6	ns
t CLQX	tHO	Output Hold Time	1	5	ns
t HLCH		HOLD# Setup Time (relative to SCLK)	5		ns
t CHHH		HOLD# Hold Time (relative to SCLK)	5		ns
t HHCH		HOLD Setup Time (relative to SCLK)	5		ns
t CHHL		HOLD Hold Time (relative to SCLK)	5		ns
t HHQX	tLZ	HOLD to Output Low-Z		6	ns
t HLQZ	tHZ	HOLD# to Output High-Z		6	ns

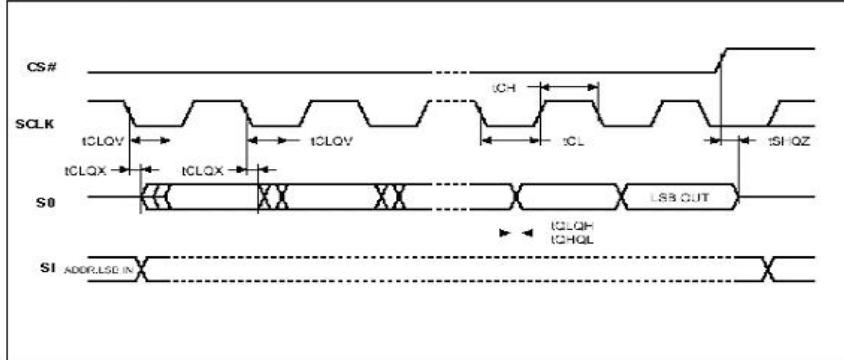
Serial Input Timing



Hold Timing



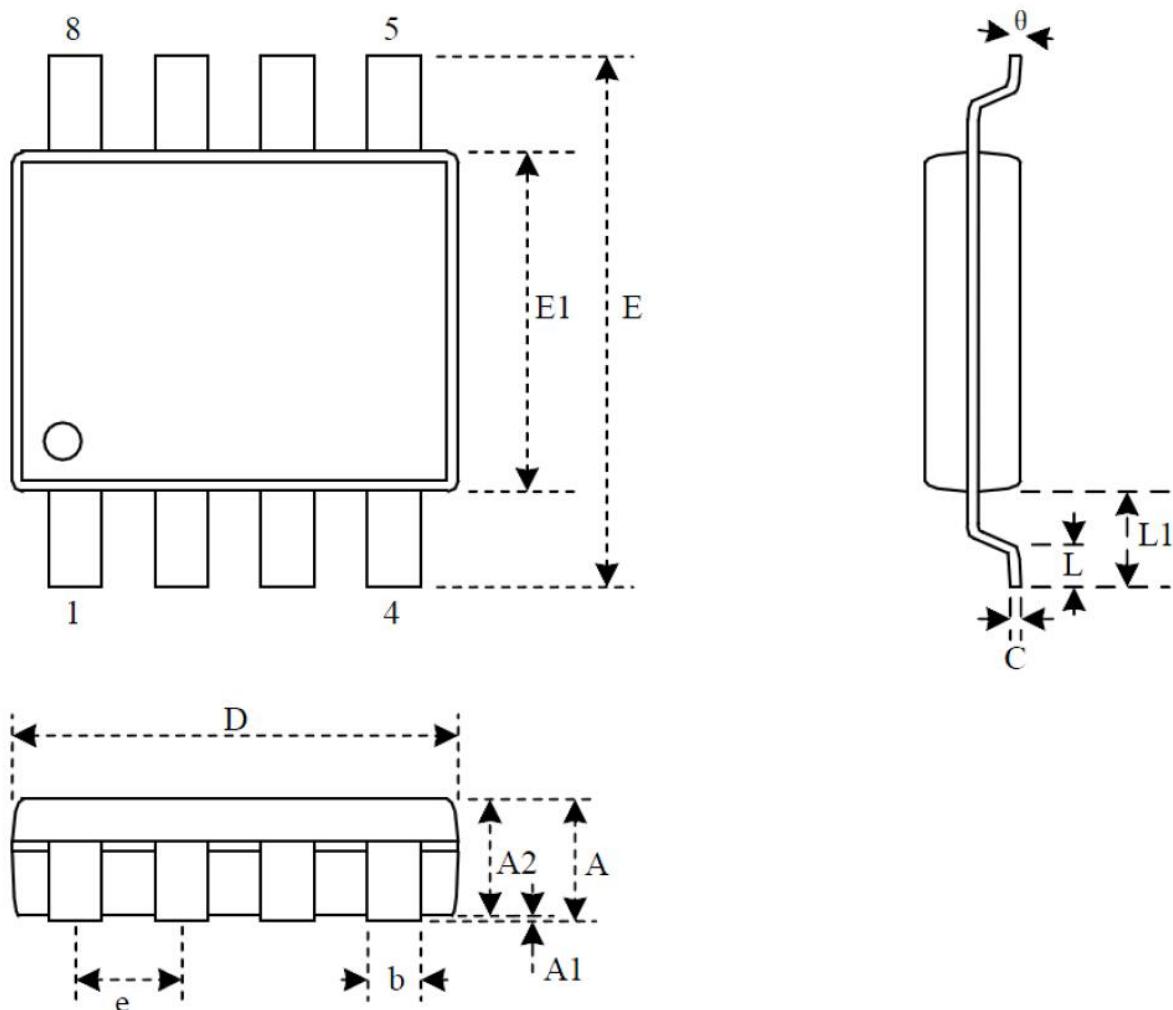
Output Timing



## 4 Operating Instruction

SOP-8BPackage

Unit :mm



Dimensions(inch dimensions are derived from the original mm dimensions)

		A	A1	A2	b	C	D	E	E1		L	L1	
Mm	Min.	-	0.05	1.70	0.36	0.19	5.13	7.70	5.18		0.50	1.21	0
	Norm.	-	0.15	1.80	0.41	0.20	5.23	7.90	5.28	1.27	0.65	1.31	5
	Max.	2.16	0.25	1.91	0.51	0.25	5.33	8.10	5.38		0.80	1.41	8
inch	Min.	-	0.002	0.067	0.014	0.007	0.202	0.303	0.204		0.020	0.048	0
	Norm.	-	0.006	0.071	0.016	0.008	0.206	0.311	0.208	0.050	0.026	0.052	5
	Max.	0.085	0.010	0.075	0.020	0.010	0.210	0.319	0.212		0.031	0.056	8

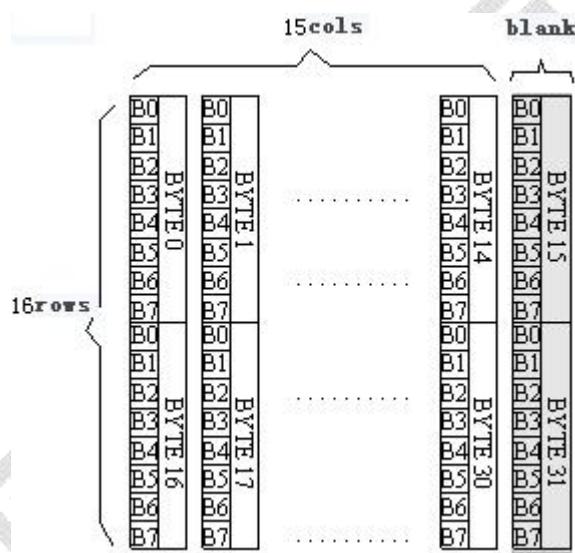
## 5 font configuration (transverse horizontal)

### 5.1 Character Dot Matrix Arrangement(Data Arrangement Format)

Each character is stored in the Chinese dot matrix format, each dot is expressed by a binary bit. 1 represents for lightened dot, 0 represents for unlightened dot. The data arrangement format is byte vertical, string horizontal. The biggest bit of BYTE represents the most left point, the smallest bit of BYTE represents the most right point. Advances when horizontal row is booked. Chinese will display when using the above method.

### 5.2 15X16

15X16 dots font requires 32 bytes (BYTE 0 – BYTE 31) to display. Data arrangement format of this 15X16 dots font is byte vertical, string horizontal, the detailed arrangement structure is showed below:

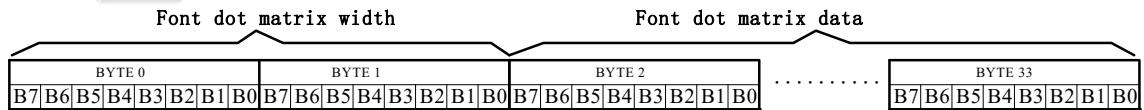


### 5.3 16 Dot Matrix Proportional Adjusted Font

16 dots proportionally adjusted font requires 34 bytes (BYTE 0 – BYTE33) to display.

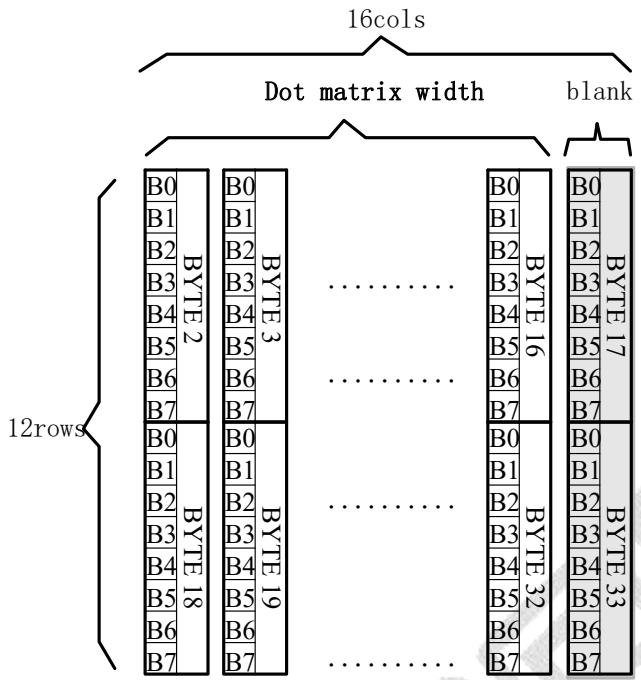
#### ■ Storage Format

For the font is proportionally adjusted, BYTE0~ BYTE1 are stored font width data, BYTE2-33 are stored dots matrix data.



#### ■ Storage structure

The dots matrix storage width of proportionally adjusted font uses BYTE as its unit. Different font.width will reveal corresponding blanks. With the font's actual width data stored in BYTE0~BYTE 1, it can be used as reference for the position of the next word.



For Example: ASCII Rounded font "B"

0-33 BYTE: 00 0C 00 00 00 00 00 00 7F 80 7F C0 60 C0 60 C0 60 C0 7F 80 7F C0 60 E0 60 60 60 60 7F C0 7F 80 00 00

In BYTE0~BYTE1: "00 0C" is width data, 12 bit width, 4 blank bits is reserved. The typeset of the next word may shift forward considering the blank bits.

In BYTE2~BYTE33: "00 00 00 00 00 00 7F 80 7F C0 60 C0 60 C0 60 C0 7F 80 7F C0 60 E0 60 60 60 60 7F C0 7F 80 00 00" is dot matrix data.

## 6 Dot Data Validation (Customer Reference)

Customers will chip "A" to call up the data with the following comparison. If so, it indicates SPI drive to work; if not, please re-write drivers.

Row set: Y (Horizontal vertical set) Dot size 8X16

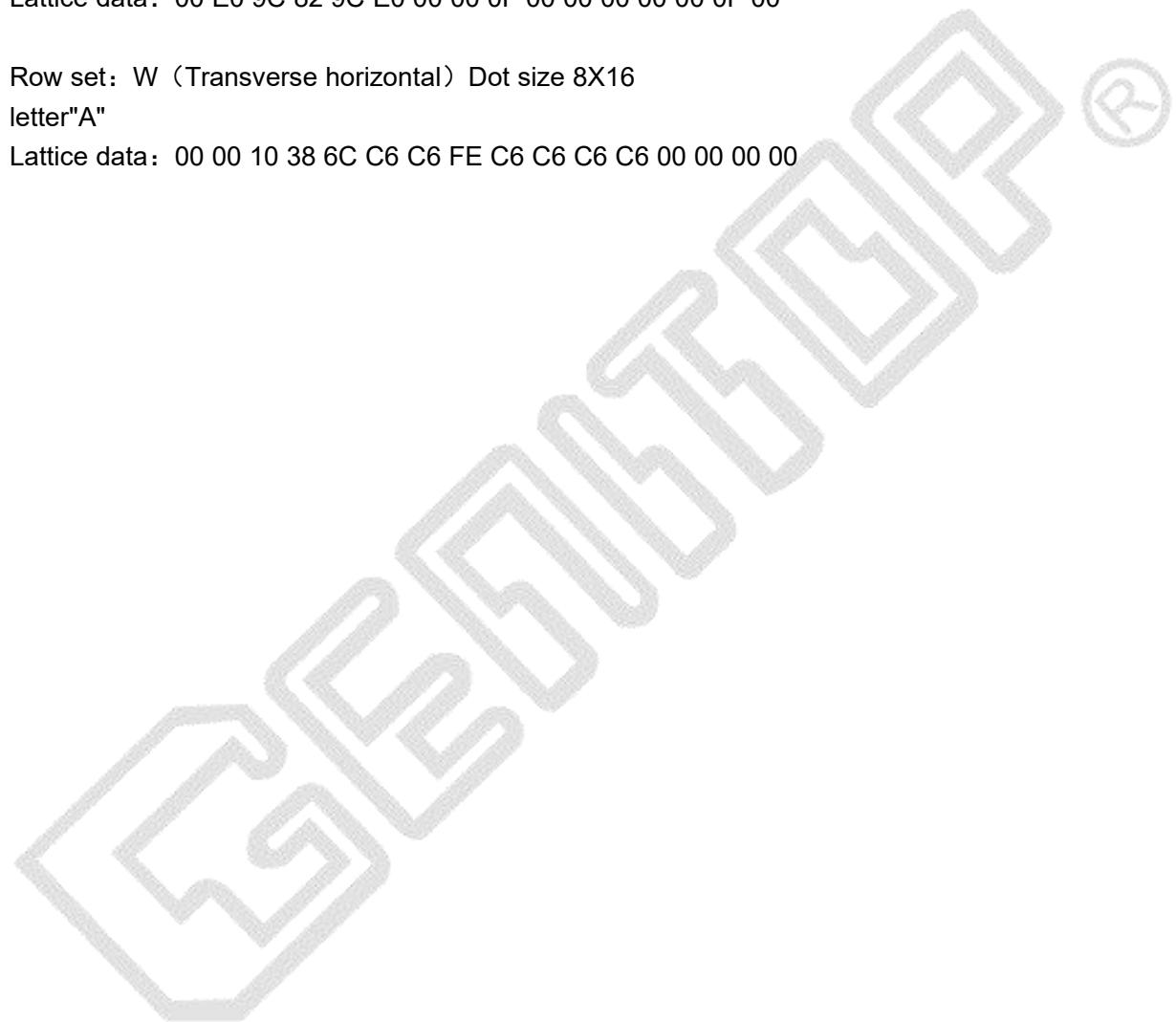
letter"A"

Lattice data: 00 E0 9C 82 9C E0 00 00 0F 00 00 00 00 00 00 0F 00

Row set: W (Transverse horizontal) Dot size 8X16

letter"A"

Lattice data: 00 00 10 38 6C C6 C6 FE C6 C6 C6 C6 00 00 00 00

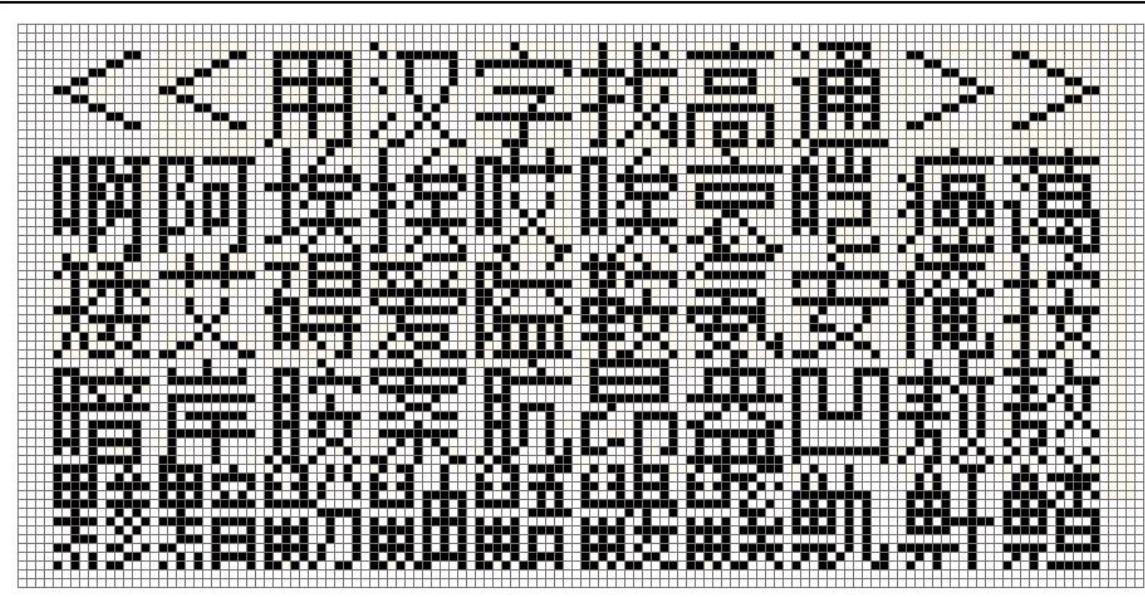


## 7 Appendix

### 7.1 Font Sample

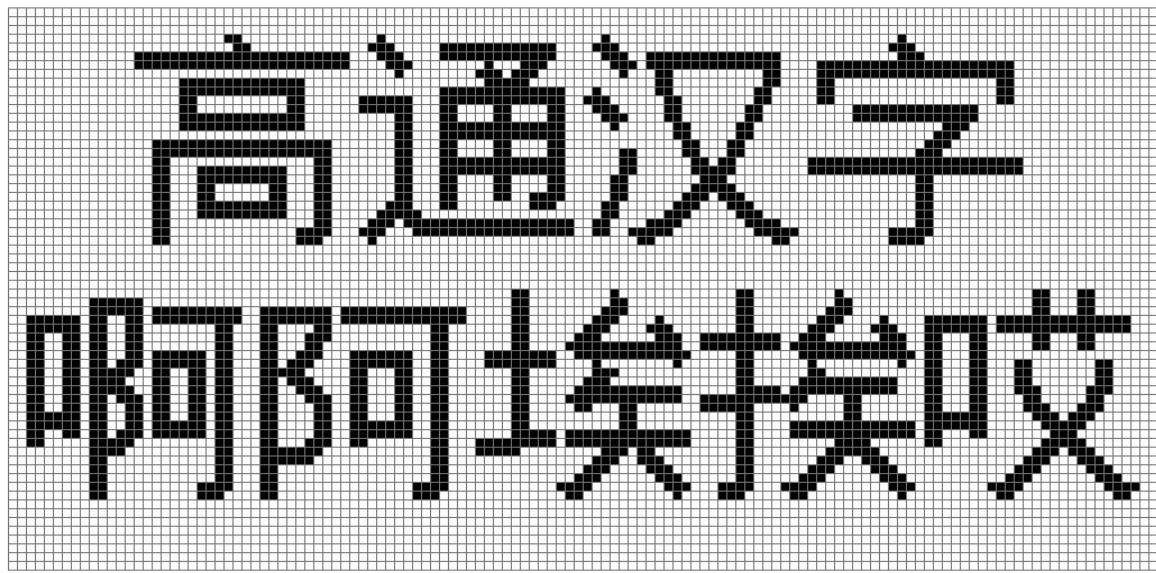
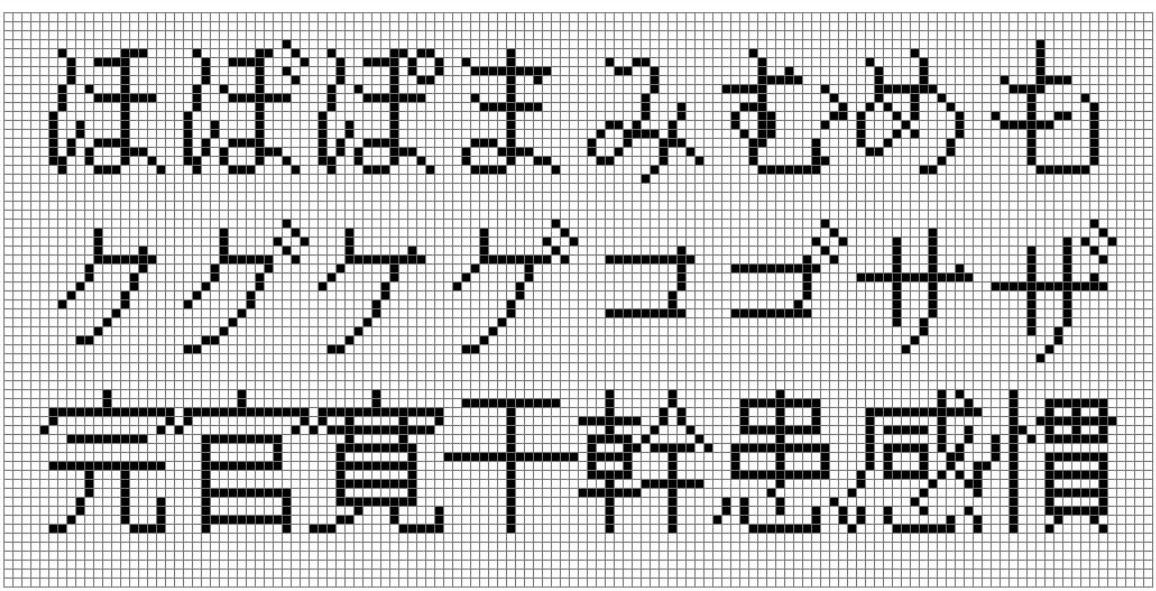
#### 7.1.1 CJK character proofs

**11x12 dot GB Chinese**



**15x16 dot GB Chinese**

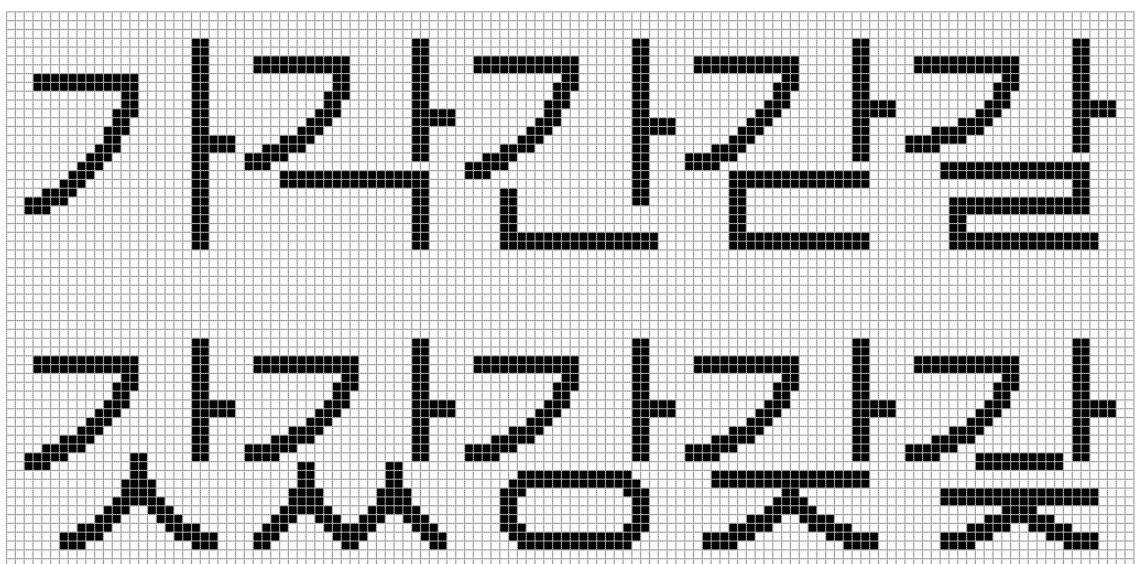


**24x24 dot GB Chinese****16 dot Japanese**

16 dot Korean character



24 dot Korean character



## 7.1.2 ASCII Character

5x7 dot ASCII Standard Character																
Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
3	0	1	2	3	4	5	6	7	8	9	:	=	0	?	0	?
4	0	1	2	3	4	5	6	7	8	9	H	I	J	K	L	M
5	P	Q	R	S	T	U	V	W	X	Y	Z	l	i	s	t	u
6	0	1	2	3	4	5	6	7	8	9	a	b	c	d	e	f
7	P	Q	R	S	T	U	V	W	X	Y	Z	l	i	s	t	u

7x8 dot ASCII Standard Character																
Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	0	1	2	3	4	5	6	7	8	9	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	:	<	=	>	?
4	0	1	2	3	4	5	6	7	8	9	H	I	J	K	L	M
5	P	Q	R	S	T	U	V	W	X	Y	Z	l	i	s	t	u
6	0	1	2	3	4	5	6	7	8	9	a	b	c	d	e	f
7	P	Q	R	S	T	U	V	W	X	Y	Z	l	i	s	t	u

**6x12 dot ASCII Standard Character**

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	!	"	#	\$	%	&	*	(	)	*	+	,	-	.	/	
3	0	1	2	3	4	5	6	7	8	9	:	:	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	]	^	_	-
6	~	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	P	q	r	s	t	u	v	w	x	y	z	{	}	~		

**8x16 dot ASCII Bold Character**

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	!	"	#	\$	%	&	*	(	)	*	+	,	-	.	/	
3	0	1	2	3	4	5	6	7	8	9	:	:	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	]	^	_	-
6	~	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	P	q	r	s	t	u	v	w	x	y	z	{	}	~		

**12x24dot ASCII Standard Character**

Low Unit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
High Unit	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	
2	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
3	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	^	_	
5	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
6	p	q	r	s	t	u	v	w	x	y	z	{	}	~		
7																

**16x32dot ASCII Bold Character**

Low Unit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
High Unit	!	"	#	\$	%	&	,	(	)	*	+	,	-	.	/	
2	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
3	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	^	_	
5	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
6	p	q	r	s	t	u	v	w	x	y	z	{	}	~		
7																

**12 dot proportional adjusted ASCII Rounded font**

!#%&()\*,,.!01234567  
89,:<=>?@A B C D E F G H I  
J K L M N O P Q R S T U V W X

**16 dot proportional adjusted ASCII Rounded font**

!#%&()\*,,.!012  
3456789,:<=> ?@

**24 dot proportional adjusted ASCII Rounded font**

!#%&()\*,,.!01234567

**32 dot proportional adjusted ASCII Rounded font**

!#%&()\*,,.!



**8x16 dot Hebrew**

מִלְכָה יַעֲזֵב  
וְאֶתְנָחָתָה

**8x16 dot Thai**

ກະບຽນຕາມອຸປະກອດ ອັດຕະກອບໄລຍະ ແລ້ວ  
ອັດຕະກອບໄລຍະ ອັດຕະກອບໄລຍະ ແລ້ວ  
ອັດຕະກອບໄລຍະ ແລ້ວ

**16 dot proportional adjusted Latin**

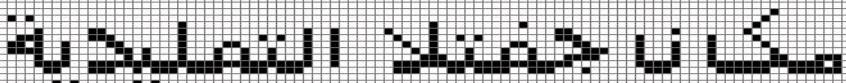
QqKkXxJjAaAaAaAaEeCc  
EeIiUuIiEeNnOoOoOoOoOo  
OoUuOoEeBbAaAaAaEeCc

**16 dot proportional adjusted Greek**

ΔΙΗΤΟΠΡΟΣΤΥΦΟΦΧΙΚЯ  
ҲЦЧШШТЬЭҶШЬВЭ  
БЕГДЕЖЭИЯМОНОП

**16 dot proportional adjusted Hindi**

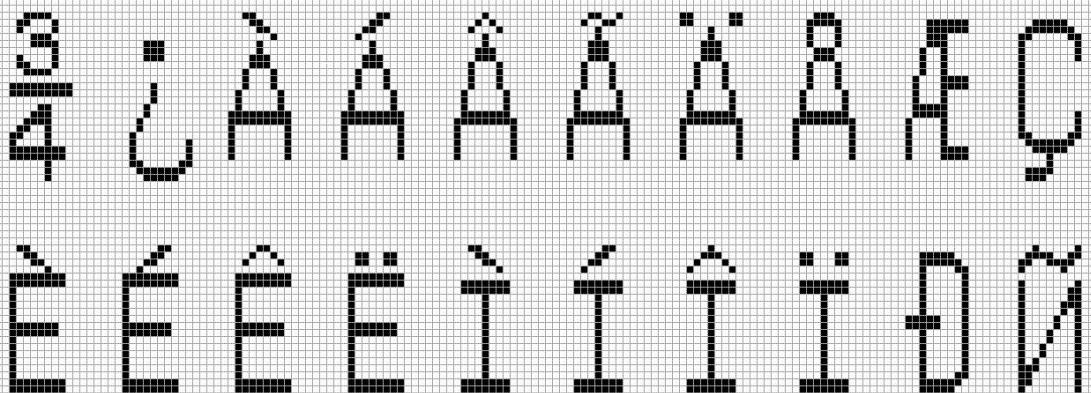
କାଳ୍ପନିକାରୀ  
କାଳ୍ପନିକାରୀ  
କାଳ୍ପନିକାରୀ  
କାଳ୍ପନିକାରୀ

**16 dot proportional adjusted Arabic**

أَلْهَمَنِيَ الْمُؤْمِنُونَ

**16 dot proportional adjusted Kirill text**

ДЕЖВИЙКЛМНЩЬЫ  
ОПРСТУФХЦЧВДЕЖЬ  
ЩЩЬЫЬЭДЯБИНОР

**12x24 dot Latin**

¾ Ð Ñ Ä Å Æ Ù ß Æ Ç  
Ë Ê Ë Ë Ì Í Ï Ì Ð Ï

**12x24dot Greek**

ΥΩΪΑΒΓΔΕ  
ΘΪΚΑΜΝΞΟ

**12x24dot Kirill text**

ЕЕЂЀСИЂЈЉ  
ѠѠЅВЃ

**12x24dot Hebrew**

כֹּוֹן וְ גַּדְלָה וְ כְּבָשָׂעָה

**24dot proportional adjusted Thai**

ก ข ฃ ฅ ქ څ ښ ډ  
ڦ ڻ ڻ ڻ ڻ ڻ ڻ ڻ

**24 dot proportional adjusted Arabic**

ك

**24 dot proportional adjusted Khmer**

អ ឃ ុ ុ ុ  
ឃ ឃ ុ ុ ុ



## 12X24dot 737—Greek (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	Π
9	Ρ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	α	β	γ	δ	ε	ζ	η	θ
A	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	ς	τ	υ	φ	χ	ψ
B	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
C	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
D	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
E	ω	ά	έ	ή	ύ	ί	ό	ύ	ύ	ώ	ά	έ	ή	ί	ό	ύ
F	Ω	±	Σ	≤	Ϊ	Ŷ	÷	≈	°	·	√	n	²	■	■	■

## 12X24dot 775—Baltic (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ć	Ü	é	ā	ä	ǵ	å	ć	ł	ē	R	r	ř	ż	ā	đ
9	É	æ	Æ	ō	ö	ó	¢	ś	ś	ö	ü	ø	ø	ø	×	ø
A	Ā	Ī	Ó	Ž	Ž	Ž	”	—	©	®	‑	‑	‑	‑	«	»
B	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
C	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
D	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
E	ā	č	đ	œ	è	í	š	ç	ú	ž	ł	ł	ł	ł	,	,
F	ó	þ	ø	ñ	ð	ó	ó	ń	ń	ķ	ķ	ķ	ķ	ķ	ñ	,
-	±	“	¾	॥	॥	÷	”	”	”	°	•	•	•	•	2	■

## 12X24dot 850—Multilingual (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ҫ	Ü	é	â	ä	à	å	ç	ê	ë	è	ë	î	ì	ä	đ
9	É	æ	Æ	ô	ö	ò	ö	ù	ý	ö	ü	ø	ø	ø	×	f
A	ā	ī	ó	ú	ñ	ÿ	ä	ó	ó	ó	ó	ó	ó	ó	«	»
B	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
C	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
D	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
E	ð	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	,
F	ó	þ	ø	õ	ð	ó	ó	þ	þ	þ	ú	ø	ú	ý	,	■
-	±	=	¾	॥	॥	÷	,	,	,	,	,	,	,	,	2	■

## 12X24 dot 852--Latin 2 (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	Ü	é	â	ä	ő	ć	ç	ł	ë	ő	ö	ő	î	í	Á
9	É	Í	Í	Ó	Ö	Í	Í	Í	Í	Ö	Ü	Ü	Ü	Ü	Ü	Ü
A	á	í	ó	ú	á	á	ž	ž	é	é	g	é	é	ç	ç	»
B	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
C	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł
D	đ	Đ	Đ	Đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ
E	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó
F	-	”	”	”	”	”	”	”	”	”	”	”	”	”	”	”

## 12X24dot 855—Cyrillic (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	А	В	С	Д	Е	Ф
8	Ђ	Ђ	Ѓ	Ѓ	ё	Ё	Є	Є	ѕ	Ѕ	і	І	ї	ї	ј	ј
9	љ	љ	њ	њ	њ	њ	ќ	ќ	ѹ	ѹ	ѹ	ѹ	ѹ	ѹ	ѹ	ѹ
A	а	А	б	Б	ц	Ц	д	Д	е	Е	ф	Ф	г	Г	«	»
B	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
C	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł
D	л	Л	м	М	н	Н	о	О	п	П	г	Г	п	п	я	я
E	ј	Р	р	С	с	Т	т	у	у	ж	Ж	в	в	ь	ь	№
F	-	ы	ы	з	з	ш	ш	э	э	щ	Щ	ч	ч	з	з	■

## 12X24dot 857—Turkish (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	А	В	С	Д	Е	Ф
8	Ç	Ü	é	â	ä	à	å	ç	ê	ë	è	ë	î	í	í	Á
9	É	æ	Æ	ô	ö	ò	ó	ù	í	ö	ü	ü	ø	ø	ø	ø
A	á	í	ó	ú	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	»
B	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
C	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł
D	ö	а	Ê	Ê	Ê	Ê	Ê	í	í	í	í	í	í	í	í	í
E	Ó	В	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó	Ó
F	-	±	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶

## 12X24dot 858—Euro (Print Font)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	Ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ã	À
9	É	æ	Æ	Ô	Ö	Ò	Û	Ù	Ý	Ö	Ü	Ø	Ñ	Ø	×	f
A	á	í	ó	ú	ñ	ñ	ä	ö	ö	ü	ü	ñ	½	¼	í	«»
B	ß	ø	ø		+	Á	Â	À	Ó			ñ	¶	¢	¥	¬
C	Ł	ł	ł	ł	-	ł	ł	ł	ł	ł	ł	ł	ł	=	ł	ł
D	ð	ð	ê	ë	ë	€	í	í	í	í	í	í	í	-	í	í
E	ő	ő	ő	ő	ő	ő	ő	ő	ő	ő	ő	ő	ő	ý	ý	,
F	-	±	=	¾	½	§	÷	.	..	.	.	1	3	2	■	

## 12X24dot 860—Portuguese (Print Font)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	Ü	é	â	ã	à	Á	ç	ê	Ê	è	Í	ô	ì	Ã	À
9	É	À	È	Ô	Õ	Ò	Ú	Ù	Ì	Õ	Ü	Ô	Ñ	Ù	pt	Ó
A	á	í	ó	ú	ñ	ñ	ä	ö	ö	ü	ü	ñ	½	¼	í	«»
B	ß	ø	ø		+	‡									‡	
C	Ł	ł	ł	ł	-	ł	ł	ł	ł	ł	ł	ł	ł	=	ł	ł
D	Þ	Þ	π	π	π	π	π	π	π	π	π	π	π	π	π	π
E	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	θ	φ	ε	□
F	≡	±	≥	≤	∫	J	÷	≈	°	•	•	∫	n	²	■	

## 12X24dot 862—Hebrew (Print Font)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	א	ב	ג	ד	ה	ו	ז	ט	כ	י	ר	ש	ל	מ	נ	ׁ
9	ג	ו	ע	ג	פ	י	ׂ	ׁ	ׁ	ׁ	ׁ	ׁ	ׁ	ׁ	ׁ	ׁ
A	á	í	ó	ú	ñ	ñ	ä	ö	ö	ü	ü	ñ	½	¼	í	«»
B	ß	ø	ø		+	‡									‡	
C	Ł	ł	ł	ł	-	ł	ł	ł	ł	ł	ł	ł	ł	=	ł	ł
D	Þ	Þ	π	π	π	π	π	π	π	π	π	π	π	π	π	π
E	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	θ	φ	ε	□
F	≡	±	≥	≤	∫	J	÷	≈	°	•	•	∫	n	²	■	

## 12X24 dot 863--Canadian French (Print Font)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	Ü	é	â	À	à	í	ç	ê	ë	è	ï	î	=	À	§
9	É	È	Ê	Ô	Ë	Ï	Ó	Ù	Ã	Ô	Ü	Ø	Ñ	Û	ô	f
A	-	'	Ó	Ú	:	.	3	-	Î	-	-'	½	¼	¾	«	»
B	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
C	Ł	ł	Ł	ł	—	+	ł	Ł	ł	Ł	ł	Ł	ł	=	Ł	Ł
D	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪
E	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	θ	φ	ε	□
F	≡	±	≥	≤	∫	J	÷	≈	°	•	•	∫	n	2	■	■

## 12X24dot 864—Arabic (Standard)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	◦	·	•	√	•	—		+	+	—	ت	ت	ل	ر	ل	ل
9	آ	ؠ	ؕ	ؔ	ؒ	ؓ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ
A	-	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ
B	•	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ
C	؋	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ
D	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ	ؔ
E	-	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ
F	-	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ	ؑ

## 12X24dot 865—Nordic (Print Font)

Low High	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	Ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ò	À	Å
9	É	æ	Æ	ô	ö	ò	ó	ù	ÿ	ö	ü	ø	ñ	Û	ø	f
A	á	í	ó	ú	ñ	ÿ	º	º	º	º	º	º	º	½	¼	»
B	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
C	Ł	ł	Ł	ł	—	+	ł	Ł	ł	Ł	ł	Ł	ł	=	Ł	Ł
D	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪	₪
E	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	θ	φ	ε	□
F	≡	±	≥	≤	∫	J	÷	≈	°	•	•	∫	n	2	■	■

**12X24 dot 866--Cyrillic 2 (Print Font)**

Low High	О	1	2	3	4	5	6	7	8	9	А	В	С	Д	Е	Ф
8	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
9	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ь	Ы	Ь	Э	Ю	Я
A	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
B	Ѡ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ	Ѽ
C	Ӆ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
D	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
E	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ь	Ы	Ь	Э	Ю	Я
F	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ

**12X24dot 1251—Cyrillic (Print Font)**

Low High	О	1	2	3	4	5	6	7	8	9	А	В	С	Д	Е	Ф
8	Ӯ	Ӯ	,	Ӯ	Ӯ	”	”	...	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
9	Ӯ	Ӯ	,	Ӯ	Ӯ	”	”	•	-	-	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
A	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
B	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
C	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
D	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
E	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
F	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ

**12X24dot 1252—Latin I (Print Font)**

Low High	О	1	2	3	4	5	6	7	8	9	А	В	С	Д	Е	Ф
8	Ӯ	,	,	Ӯ	Ӯ	”	”	...	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
9	Ӯ	,	,	Ӯ	Ӯ	”	”	•	-	-	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
A	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
B	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
C	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
D	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
E	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ
F	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ

## 12X24dot 1253—Greek (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	€	,	f	”	…	†	‡	^	%	‘	<					
9	,	“	”	•	-	-	-	~	TM	>						
A	΅	Ά	Έ	Ώ	Ύ		₪	΅	©	«	¬	-	®	-		
B	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	
C	΅	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	
D	Π	Ρ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	Ϊ	Ŷ	ά	έ	ή	ί	
E	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	
F	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ϊ	ϋ	ό	ύ	ώ	

## 12X24dot 1254—Turkish (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	€	,	f	”	…	†	‡	^	%	ſ	<	Œ				
9	,	“	”	•	-	-	-	~	TM	ſ	>	œ			Ÿ	
A	ı	¢	£	¤	¥		₪	΅	©	ª	«	¬	-	®	-	
B	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	
C	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Ï	
D	Ğ	Ĭ	Ӯ	Ӱ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	Ӯ	
E	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	ï	
F	ȝ	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ı	ÿ	

## 12X24dot 255—Hebrew New (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	€	,	f	”	…	†	‡	^	%	‘	<					
9	,	“	”	•	-	-	-	~	TM	>						
A	ִ	ַ	ָ	ֹ	ֻ	ּ	־	ַ	ָ	ְ	ֶ	ֵ	ַ	ָ	ְ	
B	ְ	ַ	ָ	ֹ	ֻ	ּ	־	ְ	ַ	ָ	ְ	ֵ	ַ	ָ	ְ	
C	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	
D	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	ֿ	
E	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	
F	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	ְ	

## 12X24dot 1256—Arabic (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	€	؂	؃	؄	؅	؆	؈	؉	؊	؋	،	؍	؎	؏	ؐ	ؑ
9	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁
A	.	؂	؃	؄	؅	؆	؈	؉	؊	؋	،	؍	؎	؏	ؐ	ؑ
B	؀	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁
C	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁
D	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁
E	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁
F	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁	؁

## 12X24dot 1257—Baltic (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	€	,	”	”	...	†	‡	%	‰	<	..	..	..	..	..	..
9	,	,	”	”	•	-	-	TM		>	-	-	-	-	-	-
A	¢	£	¤	¤	¤	¤	¤	¤	¤	¤	¤	¤	¤	¤	¤	¤
B	±	²	³	’	μ	¶	·	ø	¹	¤	¼	½	¾	¾	¾	¾
C	Ā	Ā	Ā	Ā	Ā	Ē	Ē	Ē	Ē	Ē	Ē	Ē	Ē	Ē	Ē	Ē
D	Š	Ń	Ó	Ó	Ó	Ö	Ö	Ö	Ö	Ö	Ŗ	Ŗ	Ŗ	Ŗ	Ŗ	Ŗ
E	ā	ā	ā	ā	ā	ē	ē	ē	ē	ē	é	é	é	é	é	é
F	š	ń	ó	ó	ó	ö	ö	ö	ö	ö	ż	ż	ż	ż	ż	ż

## 12X24dot 928—Greek (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A	΄	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅
B	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅	΅
C	Ϊ	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
D	Π	Ρ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω	Ϊ	Ӯ	Ӑ	Ӗ	Ҫ	ڶ	ڶ
E	Ӯ	ܾ	ܭ	ܮ	ܯ	ܰ	ܱ	ܲ	ܳ	ܴ	ܵ	ܶ	ܷ	ܸ	ܹ	ܺ
F	ܰ	ܱ	ܲ	ܳ	ܴ	ܵ	ܶ	ܷ	ܸ	ܹ	ܻ	ܼ	ܽ	ܿ	ܼ	ܼ

## 12X24dot Hebrew old (Standard)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	^	_	-
6	א	ב	ג	ד	ה	ו	ז	ט	כ	ר	ל	כ	ל	מ	נ	ׁ
7	ג	ו	ע	ף	י	ך	ך	ך	ש	ת	{		}	ׂ	ׁ	ׁ

## 12X24dot International character (Print Font)

Country	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E	
U. S. A.	#	\$	@	[	\	]	^	'	{		}	~	
France	#	\$	à	°	ç	ş	^	'	é	ù	è	..	
Germany	#	\$	ß	ä	ö	ü	^	'	ä	ö	ü	ß	
U. K.	£	\$	@	[	\	]	^	'	{		}	~	
Denmark I	#	\$	@	æ	ø	å	^	'	æ	ø	å	å	ü
Sweden	#	¤	é	å	ö	å	ü	é	ä	ö	å	ä	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ò	~
Spain	Pt	\$	@	i	ñ	ç	^	'	..	ñ	ç	~	
Japan	#	\$	@	[	¥	]	^	'	{		}	~	
Norway	#	¤	é	æ	ø	å	ü	é	æ	ø	å	å	ü
Denmark II	#	\$	é	æ	ø	å	ü	é	æ	ø	å	å	ü

## 12x24dot Katakana (Print Font)

Low High	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+
9	工	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト	ト
A	。	「	」	、	・	ヲ	ア	イ	ウ	エ	オ	ヤ	ユ	ヨ	ツ	
B	—	ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ	ソ
C	タ	チ	ツ	テ	ト	ナ	ニ	ヌ	ネ	ノ	ハ	ヒ	フ	ヘ	ホ	マ
D	ミ	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ	ル	レ	ロ	ワ	ン	。	。
E	二	ト	キ	ヨ	▲	▼	▼	◆	◆	◆	◆	●	○	△	△	
F	×	円	年	月	日	時	分	秒	〒	市	区	町	村	人	■■■■	

## 7.2 180Total Foreign Text Database Table

文系	区域	序号	国家	语言
拉丁文 (英语)	欧洲	1	英国 Britain 或 United Kingdom	英语
		2	爱尔兰 Ireland	
	北美洲	3	美国 USA	
		4	加拿大 Canada	
		5	伯利兹 Belize	
		6	牙买加 Jamaica	
		7	特立尼达和多巴哥 Trinidad and Tobago	
		8	巴哈马 Bahamas	
		9	安提瓜和巴布达 Antigua and Barbuda	
		10	多米尼加 Dominica	
		11	圣文森特 St.Vincent	
		12	圣卢西亚岛 St.Lucia	
		13	格林纳达 Grenada	
		14	圣基茨—尼维斯 St.Kitts-Nevis	
	南美洲	15	圭亚那 Guyana	英语
大洋洲	大洋洲	16	澳大利亚 Australia	英语
		17	新西兰 New Zealand	
		18	汤加 Tonga	
		19	斐济 Fiji	
		20	帕劳 Palau	
		21	所罗门 Solomon	
		22	瓦努阿图 Vanuatu	
		23	基里巴斯 Kiribati	
		24	瑙鲁 Nauru	
		25	马绍尔群岛 Marshall Islands	
	非洲	26	南非 South Africa	英语、南非荷兰语
		27	津巴布韦 Zimbabwe	
		28	冈比亚 Gambia	
		29	塞拉利昂 Sierra Leone	
		30	利比里亚 Liberia	
		31	加纳 Ghana	
		32	尼日利亚 Nigeria	
		33	乌干达 Uganda	
		34	赞比亚 Zambia	
		35	马拉维 Malawi	
		36	塞舌尔 Seychelles	
		37	毛里求斯 Mauritius	
		38	博茨瓦纳 Botswana	

		39	纳米比亚	Namibia	
		40	莱索托	Lesotho	
	亚洲	41	新加坡	Singapore	英语
拉丁文 (法语)	欧洲	42	法国	France	法语
		43	比利时	Belgium	法语、荷兰语
		44	摩纳哥	Monaco	法语、意大利语
		45	海地	Haiti	法语
	非洲	46	塞内加尔	Senegal	法语
		47	马里	Mali	
		48	布基纳法索	Burkina Faso	
		49	几内亚	Guinea	
		50	科特迪瓦	cote dIvoire	
		51	多哥	Togo	法语
		52	贝宁	Benin	
		53	尼日尔	Niger	
		54	喀麦隆	Cameroon	
		55	乍得	Chad	
		56	中非	Central African Republic	
拉丁文 (法语)	非洲	57	吉布提	Djibouti	
		58	布隆迪	Burundi	
		59	民主刚果	Republic of Democratic Congo	
		60	刚果	Congo	法语
		61	加蓬	Gabon	
		62	科摩罗	Comoros	
		63	马达加斯加	Madagascar	
拉丁文 (西班牙语)	欧洲	64	西班牙	Spain	西班牙语、加泰隆语
		65	安道尔	Andorra	西班牙语
	北美洲	66	墨西哥	Mexico	
		67	危地马拉	Guatemala	
		68	哥斯达黎加	Costa Rica	
		69	巴拿马	Panama	
		70	多米尼加共和国	Dominican Republic	
		71	萨尔瓦多	El Salvador	
		72	洪都拉斯	Honduras	
		73	尼加拉瓜	Nicaragua	
		74	波多黎各	Puerto Rico	
		75	古巴	Cuba	
	南美洲	76	委瑞内拉	Venezuela	西班牙语

		77	哥伦比亚	Colombia	
		78	秘鲁	Peru	
		79	阿根廷	Argentina	
		80	厄瓜多尔	Ecuador	
		81	智利	Chile	
		82	乌拉圭	Uruguay	
		83	巴拉圭	Paraguay	
		84	玻利维亚	Bolivia	
	非洲	85	赤道新几内亚	Equatorial New Guinea	西班牙语
		86	休达和梅利亚	Ceuta and Melilla	
拉丁文 (葡萄牙语)	欧洲	87	葡萄牙	Portugal	葡萄牙语
	南美洲	88	巴西	Brazil	
	非洲	89	佛得角	Cape Verde	
		90	几内亚比绍	Guinea-Bissau	
		91	圣多美和普林西比	Sao Tome and Principe	
		92	安哥拉	Angola	
		93	莫桑比克	Mozambique	
拉丁文 (德语)	欧洲	94	德国	Germany	德语
		95	瑞士	Switzerland	德语、法语
		96	奥地利	Austria	德语
		97	卢森堡	Luxembourg	德语、法语
		98	列支敦士登	Liechtenstein	德语
拉丁文 (荷兰语)	欧洲	99	荷兰	Holland	荷兰语
	南美洲	100	苏里南	Surinam	
拉丁文 (北欧)	欧洲	101	丹麦	Denmark	丹麦语
		102	挪威	Norway	挪威语
		103	瑞典	Sweden	瑞典语
		104	格陵兰	Greenland	格陵兰语
		105	冰岛	Iceland	冰岛语
		106	芬兰	Finland	芬兰语、瑞典语
		107	爱沙尼亚	Estonia	爱沙尼亚语
		108	拉脱维亚	Latvia	拉脱维亚语
		109	立陶宛	Lithuania	立陶宛语
拉丁文 (中欧)	欧洲	110	捷克	Czech	捷克语
		111	斯洛伐克	Slovakia	斯洛伐克语
		112	波兰	Poland	波兰语
		113	匈牙利	Hungary	匈牙利语
		114	罗马尼亚	Romania	罗马尼亚语
拉丁文 (中欧)	欧洲	115	斯洛文尼亚	Slovenia	斯洛文尼亚语
		116	克罗地亚	Croatia	克罗地亚语
拉丁文	欧洲	117	意大利	Italy	意大利语

(南欧)		118	圣马力诺	San Marino	
		119	梵蒂冈	Vatican	
		120	土耳其	Turkey	
		121	马耳他	Malta	
		122	阿尔巴尼亚	Albania	
拉丁文 (东南亚)	亚洲	123	越南	Vietnam	越南语
		124	马来西亚	Malaysia	马来语
		125	文莱	Brunei	
		126	印度尼西亚	Indonesia	印尼语
		127	东帝汶	East Timor	
		128	菲律宾	Philippines, The	英语、塔加洛语
拉丁文 (非洲)	非洲	129	肯尼亚	Kenya	斯瓦西里语
		130	坦桑尼亚	Tanzania	
西里尔文 (东欧)	欧洲	131	俄罗斯	Russia	俄语
		132	白俄罗斯	Byelorussia 或 Belarus	
		133	乌克兰	Ukraine	俄语、乌克兰语
		134	保加利亚	Bulgaria	保加利亚语
		135	摩尔多瓦	Moldova	俄语
		136	南斯拉夫联盟	F.R.Yugoslavia	塞尔维亚语
		137	波黑	Barbados	塞尔维亚语
		138	马其顿	Macedonia	马其顿语
西里尔文 (亚洲)	亚洲	139	阿塞拜疆	Azerbaijan	阿塞拜疆语
		140	吉尔吉斯斯坦	Kirghizstan	吉尔吉斯斯坦语
		141	塔吉克斯坦	Tajikistan	塔吉克斯坦语
		142	土库曼斯坦	Turkmenistan	土库曼斯坦语
		143	乌兹别克斯坦	Uzbekistan	乌兹别克斯坦语
		144	哈萨克斯坦	Kazakhstan	哈萨克斯坦语
		145	蒙古	Mongolia	蒙古语
希腊文	亚洲	146	希腊	Greece	希腊语
		147	塞浦路斯	Cyprus	
		148	埃及	Egypt	阿拉伯语
阿拉伯文 (非洲)	非洲	149	突尼斯	Tunisia	阿拉伯语
		150	利比亚	Libya	
		151	摩洛哥	Morocco	
		152	阿尔及利亚	Algeria	
		153	苏丹	Sudan, The	
		154	索马里	Somalia	
		155	西撒哈拉	West Sahara	
		156	毛里塔尼亚	Mauritania	
		157	叙利亚	Syria	

阿拉伯文 (亚洲)	亚洲	158	阿联酋	United Arab Emirates, The	波斯语
		159	黎巴嫩	Lebanon	
		160	也门	Yemen	
		161	科威特	Kuwait	
		162	卡塔尔	Qatar	
		163	巴林	Bahrain	
		164	阿曼	Oman	
		165	约旦	Jordan	
		166	伊拉克	Iraq	
		167	沙特阿拉伯	Saudi Arabia	
		168	巴勒斯坦	Palestine	
		169	伊朗	Iran	
希伯来文	亚洲	170	巴基斯坦	Pakistan	乌尔都语、阿拉伯语
		171	阿富汗	Afghanistan	普什图语
泰文	天城体	172	以色列	Israel	希伯来语
高棉文		173	泰国	Thailand	泰语
印地文		174	老挝	Japan	
中文		175	柬埔寨	Cambodia	高棉语
日文	方块体	176	印度	India	印度语
韩文		177	中国	China	汉语
		178	日本	Japan	日语
		179	韩国	Korea	韩语
		180	朝鲜	North Korea	

### 7.3 180 Foreign text pinyin index table (Pinyin ordering)

180 Foreign text pinyin index table (Pinyin ordering)

首字母	国家	7.2 表序号
A (15)	阿尔巴尼亚	122
	阿尔及利亚	152
	阿富汗	171
	阿根廷	79
	阿联酋	158
	阿曼	164
	阿塞拜疆	139
	埃及	148
	爱尔兰	2
	爱沙尼亚	107
	安道尔	65
	安哥拉	92
	安提瓜和巴布达	9
	奥地利	96
	澳大利亚	16
B (21)	巴哈马	8
	巴基斯坦	170
	巴拉圭	83
	巴勒斯坦	168
	巴林	163
	巴拿马	69
	巴西	88
	白俄罗斯	132
	保加利亚	134
	贝宁	52
	比利时	43
	秘鲁	78
	冰岛	105
	波黑	137
	波兰	112
	波罗黎各	74
	玻利维亚	84
	伯利兹	5
	博茨瓦纳	38

布基纳法索	48
布隆迪	58
C (2)	朝鲜
	赤道新几内亚
D (6)	丹麦
	德国
	东帝汶
	多哥
	多米尼加
	多米尼加共和国
E (2)	俄罗斯
	厄瓜多尔
F (6)	法国
	梵蒂冈
	菲律宾
	斐济
	芬兰
	佛得角
G (8)	冈比亚
	刚果
	哥伦比亚
	哥斯达黎加
	格林纳达
	格陵兰
	古巴
	圭亚那
H (5)	哈萨克斯坦
	海地
	韩国
	荷兰
	洪都拉斯
J (11)	基里巴斯
	吉布提
	吉尔吉斯斯坦
	几内亚
	几内亚比绍

	加拿大	4
	加纳	31
	加蓬	61
	柬埔寨	175
	捷克	110
	津巴布韦	27
K (7)	喀麦隆	54
	卡塔尔	162
	科摩罗	62
	科特迪瓦	50
	科威特	161
	克罗地亚	116
	肯尼亚	129
L (10)	拉脱维亚	108
	莱索托	40
	老挝	174
	黎巴嫩	159
	立陶宛	109
	利比里亚	30
	利比亚	150
	列支敦士登	98
	卢森堡	97
	罗马尼亚	114
M (17)	马达加斯加	63
	马耳他	121
	马拉维	35
	马来西亚	124
	马里	47
	马其顿	138
	马绍尔群岛	25
	毛里求斯	37
	毛里塔尼亚	156
	美国	3
	蒙古	145
	民主刚果	59
	摩尔多瓦	135
	摩洛哥	151
	摩纳哥	44
	莫桑比克	93
	墨西哥	66
N (8)	纳米比亚	39
	南非	26

	南斯拉夫联盟	136
	瑙鲁	24
	尼加拉瓜	73
	尼日尔	53
	尼日利亚	32
	挪威	102
P (2)	帕劳	20
	葡萄牙	87
R (3)	日本	178
	瑞典	103
	瑞士	95
S (17)	萨尔瓦多	71
	塞拉利昂	29
	塞内加尔	46
	塞浦路斯	147
	塞舌尔	36
	沙特阿拉伯	167
	圣多美和普林西比	91
	圣基茨—尼维斯	14
	圣卢西亚岛	12
	圣马力诺	118
	圣文森特	11
	斯洛伐克	111
	斯洛文尼亚	115
	苏丹	153
	苏里南	100
	所罗门	21
	索马里	154
T (8)	塔吉克斯坦	141
	泰国	173
	坦桑尼亚	130
	汤加	18
	特立尼达和多巴哥	7
	突尼斯	149
	土耳其	120
	土库曼斯坦	142
W (8)	瓦努阿图	22
	危地马拉	67
	委瑞内拉	76
	文莱	125
	乌干达	33
	乌克兰	133

	乌拉圭	82
	乌兹别克斯坦	143
X (8)	西班牙	64
	西撒哈拉	155
	希腊	146
	新加坡	41
	新西兰	17
	匈牙利	113
	休达和梅利亚	86
	叙利亚	157
Y (11)	牙买加	6
	也门	160
	伊拉克	166

	伊朗	169
	以色列	172
	意大利	117
	印度	176
	印度尼西亚	126
	英国	1
	约旦	165
	越南	123
Z (5)	赞比亚	34
	乍得	55
	智利	81
	中非	56
	中国	177

## 7.4 Total Foreign Text Database Table(The English alphabetical order)

首字母	国家	7.2 表序号
A(10)	Afghanistan	171
	Albania	122
	Algeria	152
	Andorra	65
	Angola	92
	Antigua and Barbuda	9
	Argentina	79
	Australia	16
	Austria	96
	Azerbaijan	139
B(15)	Bahamas	8
	Bahrain	163
	Barbados	137
	Belgium	43
	Belize	5
	Benin	52
	Bolivia	84
	Botswana	38
	Brazil	88
	Britain 或 United Kingdom	1
	Brunei	125
	Bulgaria	134
	Burkina Faso	48
	Burundi	58
	Byelorussia 或 Belarus	132
C(17)	Cambodia	175
	Cameroon	54
	Canada	4
	Cape Verde	89
	Central African Republic	56
	Ceuta and Melilla	86
	Chad	55
	Chile	81
	Colombia	77
	Comoros	62
	Congo	60
	Costa Rica	68

cote dIvoire	50	
Croatia	116	
Cuba	75	
Cyprus	147	
Czech	110	
D(4)	Denmark	101
	Djibouti	57
	Dominica	10
	Dominican Republic	70
E(6)	East Timor	127
	Ecuador	80
	Egypt	148
	El Salvador	71
	Equatorial New Guinea	85
	Estonia	107
F(4)	F.R.Yugoslavia	136
	Fiji	19
	Finland	106
	France	42
G(11)	Gabon	61
	Gambia	28
	Germany	94
	Ghana	31
	Greece	146
	Greenland	104
	Grenada	13
	Guatemala	67
	Guinea	49
	Guinea-Bissau	90
	Guyana	15
H(4)	Haiti	45
	Holland	99
	Honduras	72
	Hungary	113
I(7)	Iceland	105
	India	176
	Indonesia	126
	Iran	169
	Iraq	166
	Israel	172

	Italy	117	O(1)	Oman	164
J(4)	Jamaica	6	P(10)	Pakistan	170
	Japan	174		Palau	20
	Japan	178		Palestine	168
	Jordan	165		Panama	69
K(6)	Kazakhstan	144		Paraguay	83
	Kenya	129		Peru	78
	Kirghizstan	140		Philippines, The	128
	Kiribati	23		Poland	112
	Korea	179		Portugal	87
	Kuwait	161		Puerto Rico	74
L(9)	Latvia	108	Q(1)	Qatar	162
	Lebanon	159	R(3)	Republic of Democratic Congo	59
	Lesotho	40		Romania	114
	Liberia	30		Russia	131
	Libya	150	S(22)	San Marino	118
	Liechtenstein	98		Sao Tome and Principe	91
	Lithuania	109		Saudi Arabia	167
	Ireland	2		Senegal	46
	Luxembourg	97		Seychelles	36
M(15)	Macedonia	138		Sierra Leone	29
	Madagascar	63		Singapore	41
	Malawi	35		Singapore	177
	Malaysia	124		Slovakia	111
	Mali	47		Slovenia	115
	Malta	121		Solomon	21
	Marshall Islands	25		Somalia	154
	Mauritania	156		South Africa	26
	Mauritius	37		Spain	64
	Mexico	66		St.Kitts-Nevis	14
	Moldova	135		St.Lucia	12
	Monaco	44		St.Vincent	11
	Mongolia	145		Sudan, The	153
	Morocco	151		Surinam	100
	Mozambique	93		Sweden	103
N(8)	Namibia	39		Switzerland	95
	Nauru	24		Syria	157
	New Zealand	17	T(9)	Tajikistan	141
	Nicaragua	73		Tanzania	130
	Niger	53		Thailand	173
	Nigeria	32		Togo	51
	North Korea	180		Tonga	18
	Norway	102			

	Trinidad and Tobago	7
	Tunisia	149
	Turkey	120
	Turkmenistan	142
U(6)	Uganda	33
	Ukraine	133
	United Arab Emirates, The	158
	Uruguay	82
	USA	3

	Uzbekistan	143
V(4)	Vanuatu	22
	Vatican	119
	Venezuela	76
	Vietnam	123
W(1)	West Sahara	155
Y(1)	Yemen	160
Z(2)	Zambia	34
	Zimbabwe	27





**Shanghai OFFICE**

Address : YiShanRoad 1388 China Resources Building, Building 2,  
Layer 2 , Xuhui District , Shanghai  
Phone : 021-54451588 54451000 54452288  
fax : 021-54451589-810  
E-mail : gtsales@genitop.com

**Shenzhen OFFICE**

Address : Tairan Trade and Industry Park 213 3BV2, Futian District,  
Shenzhen