

APPLICATION NOTE

VACUUM FLUORESCENT DISPLAY MODULE

GRAPHIC DISPLAY MODULE

GP1045A13A

GENERAL DESCRIPTION

FUTABA GP1045A13A is a graphic display module using a FUTABA 256×64 VFD.

Consisting of a VFD, display drivers and a control circuit, the module can be driven by connecting to the host system through a simple interface.

Important Safety Notice

Please read this note carefully before using the product.

Warning

- The module should be disconnected from the power supply before handling.
- The power supply should be switched off before connecting or disconnecting the power or interface cables.
- The module contains electronic components that generate high voltages (approx. 70V) which may cause an electrical shock when touched.
- Do not touch the electronic components of the module with any metal objects.
- The VFD used on the module is made of glass and should be handled with care. When handling the VFD, it is recommended that cotton gloves be used.
- The module is equipped with a circuit protection fuse.
- Under no circumstances should the module be modified or repaired. Any unauthorized modifications or repairs will invalidate the product warranty.
- The module should be abolished as the factory waste.

1. FEATURES

- 1-1. High quality and long life can be achieved with FUTABA VFD.
- 1-2. Being equipped with VFD driver ICs, a controller, Kanji character generator ROM, RS-232C interface IC and PSU.
- 1-3. Compact and light weight unit by using packed display drivers and one chip VFD controller.
- 1-4. It realizes displaying a Kanji character by RS-232C serial communication.

2. GENERAL SPECIFICATIONS

2-1. Outer dimension, Weight, (Refer to FIGURE-1)

Table-1

Item	Specification	Unit
Outer dimension	(W) 230.0±0.8	mm
	(H) 88.5±0.8	
	(T) 29.3 Max.	
Weight	Approx. 320	g

2-2. Display specification

Table-2

Item	Specification	Unit
Display area	163.59(W)×39.43(H)	mm
No. of pixels	256(W)×64(H)	dots
Dot size	0.39(W)×0.37(H)	mm
Dot pitch	0.64(W)×0.62(H)	mm
Illumination color	Green ($\lambda_p=505\text{nm}$)	—

2-3. Environmental conditions

Table-3

Item	Symbol	MIN	MAX	Unit
Operating temperature	T_{opr}	0	+50	°C
Storage temperature	T_{stg}	-20	+70	°C
Operating humidity (Note)	H_{pr}	20	80	%
Storage humidity (Note)	H_{sg}	20	90	%
Vibration (10~55Hz)	—	—	4	G
Shock	—	—	40	G

Note) Avoid operations and/or storage in moist environmental conditions.

2-4. Absolute maximum ratings

Table-4

Item	Symbol	MIN	MAX	Unit
Supply voltage	V_{CC}	-0.3	5.5	Vdc
Input signal voltage	V_{IS}	-25	25	V

2-5. Recommended operating conditions

Table-5

Item	Symbol	MIN	TYP	MAX	Unit
Supply voltage	V_{CC}	4.5	5.0	5.5	Vdc
Receiver positive-going input threshold voltage	V_{IH}	-	—	2.4	V
Receiver negative-going input threshold voltage	V_{IL}	0.8	—	—	V

2-6. Electrical, optical characteristics

Table-6

Item	Symbol	Conditions	MIN	TYP	MAX	Unit
Supply current ^(Note1)	I_{CC}	$V_{CC}=5.0V$ All dots on	—	1.8	2.4	A
Power consumption	—		—	9	12	W
Luminance ^(Note2)	L		200	350	—	cd/m ²
High level output voltage	V_{OH}	$V_{CC}=5.0V$ $I_{OH}=-1.5mA$	5	—	15	V
Low level output voltage	V_{OL}	$V_{CC}=5.0V$ $I_{OL}=1.5mA$	-15	—	-5	V

Note1) The surge current can be approx.5 times of specified maximum supply current at power on.

Note2) It indicates the value at 100% luminance adjustment level.

3. BASIC FUNCTIONS

3-1. Communication

3-1-1. Data reception

A module processes the reception data, assuming the state of reception prohibition by disabled RTS signal, when data is transferred to the module.

After processing the data, the module can be ready to receive next data by enabled RTS signal.

The RTS signal is controlled on the module side.

3-1-2. Communication error

- a) When transferred data can not be received properly at host system by the reason of the transmission failure, the module makes it the transmitted data.
- b) In case of the command reception, when the overrun or the flaming error occurs, the command is ignored.
- c) In case of the display data reception, when the overrun or the flaming error occurs, the display data is ignored.
- d) In case of the command reception, when the parity error occurs, the command is ignored.
- e) In case of the display data reception, when the parity error occurs, the display data is ignored.
- f) When an illegal command is received, the command is ignored.

3-2. Data, command write-in

When a Shift-JIS/ANK character code is received, the data is written from the home position (the most significant digit of the top row) or specified position, which is set by 'Set virtual cursor' command. And then the write in position is shifted one digit to the right automatically.

In case the write-in position is on the least significant digit of the row, the write-in position is left on the same position and a next character code is overwritten.

3-3. Command

The following are all commands of the module.

Table-7

No.	Command description	Command code
1	Back space without deleting	08H
2	Line feed	0AH
3	Carriage return	0DH
4	Clear display	1BH, 5BH, 32H, 4AH
5	Set virtual cursor	1BH, 5BH, (Py)H, 3BH, (Px)H, 48H
6	Delete to end of line	1BH, 5BH, 30H, 4BH
7	Dimming	1BH, 5CH, 3FH, 4CH, 44H, (Ps)H
8	Cursor mode	1BH, 5CH, 3FH, 4CH, 43H, (Ps)H
9	Screen Mode	1BH, 5CH, 3FH, 4CH, 53H, (Ps)H
10	Horizontal scroll	1BH, 5CH, 3FH, 4CH, 48H (Pm)H, 3BH, (Pl)H, 3BH, (Pt)H, 3BH, (Pn)H, 3BH, (Pd)H
11	Display mode set for blinking mode	1BH, 5BH, 35H, 6DH
	Display mode set for reverse mode	1BH, 5BH, 37H, 6DH
	Reset of display mode set	1BH, 5BH, 30H, 6DH
12	User definable font set by 24×24 dots	1BH, 5CH, 3FH, 4CH, 57H, 35H Pf, 3BH, Pn, 3BH, Pc, 3BH, Pd...Pd
	User definable font set by 12×24 dots	1BH, 5CH, 3FH, 4CH, 57H, 34H Pf, 3BH, Pn, 3BH, Pc, 3BH, Pd...Pd
	User definable font set by 16×16 dots	1BH, 5CH, 3FH, 4CH, 57H, 33H Pf, 3BH, Pn, 3BH, Pc, 3BH, Pd...Pd
	User definable font set by 8×16 dots	1BH, 5CH, 3FH, 4CH, 57H, 32H Pf, 3BH, Pn, 3BH, Pc, 3BH, Pd...Pd
	User definable font set by ANK (5×7 dots)	1BH, 5CH, 3FH, 4CH, 57H, 31H Pf, 3BH, Pn, 3BH, Pc, 3BH, Pd...Pd
13	Graphic display mode	1BH, 5CH, 3FH, 4CH, 47H Px, 3BH, Py, 3BH, Ph, 3BH, Pw, 3BH, Pd...Pd
14	Double size letter in horizontal	1BH, 23H, Ps
15	Character code set of Full size letter	The following are Display character code (2 bytes code)
16	Character code set of Half size letter	The following are Display character code (1 byte code)
17	Horizontal scroll on all lines (Scroll mode select command)	1BH, 5CH, 3FH, 4CH, 4DH, 53H
	Horizontal scroll on all lines Display mode set	1BH, 5DH, 3FH, 4CH, 4DH, Pm, 3BH, Pl, 3BH, Pc, 3BH, Pn, 3BH, Pd...Pd
	Horizontal scroll on all lines Scroll start command	1BH, 5DH, 3FH, 4CH, 4DH, 47H
	Horizontal scroll on all lines Release command of scroll mode	1BH, 5DH, 3FH, 4CH, 4DH, 45H
18	Descriptor control	1BH, 5CH, 3FH, 44H, 53H, Ps
19	Descriptor blink control	1BH, 5CH, 3FH, 44H, 42H, Ps

Other codes except the above are ignored.

3-3-1. Back space without deleting (08H)

The write-in position is shifted to the left one digit and displaying screen is not changed.
This command is ignored when write-in position is on the least significant digit.

3-3-2. Line Feed (0AH)

The write-in position is shifted to the next row on the same digit position.

When the write-in position is on the bottom row, the displayed character is scrolled up to the upper row and all characters on the bottom row are cleared. The write in position is not changed.

The displayed character under the screen mode of the 24×24dot 1row + 16×16dot 2rows is not scrolled up from the row of 16×16 dot format to 24×24 dot.

3-3-3. Carriage return (0DH)

The write-in position is shifted to the most significant digit of the same row.

When the write-in position is on the most significant digit, this is ignored.

3-3-4. Clear display (1BH,5BH,32H,4AH)

All the displayed character are erased. The write-in position is not changed.

3-3-5. Set virtual cursor (1BH,5BH,Py,3BH,Px,48H)

Instead of writing the character from the first digit, the write-in start position can be pointed with this command.

The write-in position is shifted with Py, Px.(It is based on the half size letter of the font, which is specified by Screen Mode.)

Py indicates the position of the row and Px the digit.

Py and Px have to be defined under the following conditions.

- 1) Py=0, Py=1(31H)
- 2) Py>bottom row, Py=bottom row
- 3) Px=0, Px=1(31H)
- 4) Px>least digit, Px=least digit

When ESC [H' (1BH,5BH,48H,27H) command is input, the write-in position moves to home position (Py=1, Px=1).

3-3-6. Delete to end of line (1BH,5BH,30H,4BH)

The displayed characters from the write-in position to the end on the same row are erased.

The write-in position is not shifted.

3-3-7. Dimming (1BH,5CH,3FH,4CH,44H,Ps)

Luminance can be adjusted into six levels by using this function.

The following one byte data, after writing 1BH 5CH 3FH 4CH 44H, is written to change dimming level.

When the module is turned on , it is set to dimming level 5 (100%).

Table-8

Ps	Luminance(%)
0 (30H)	0
1 (31H)	31.6
2 (32H)	45.0
3 (33H)	58.8
4 (34H)	79.4
5 (35H)	100

3-3-8. Cursor mode (1BH,5CH,3FH,4CH,43H,Ps)

This is only available under the screen mode of 5×7dot, 8rows.

The following one-byte data (Ps), after writing 1BH 5CH 3FH 4CH 43H, is written to change the cursor mode. The cursor is always displayed at the write-in position.

The cursor is formed by 5 dots located at the bottom of 5×7 dot matrix character font.

Table -9

Ps	Select mode
0 (30H)	No Lighting
1 (31H)	Blinking
2 (32H)	Lighting

a) No Lighting mode

The cursor is not displayed on.

When the power is turned on, no lighting mode is selected automatically.

b) Blinking mode

The cursor is repeated ON and OFF every 0.3 seconds on the blank digit.

c) Lighting mode

The cursor is displayed on.

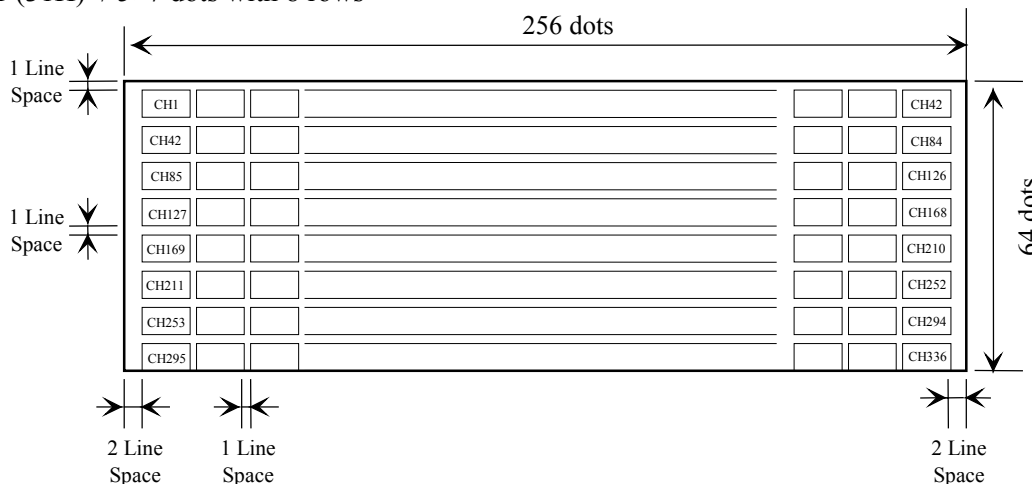
When the write-in position is assigned to the digit on where a character is displayed, the cursor is displayed on, instead of the character displayed.

3-3-9. Screen mode (1BH,5CH,3FH,4CH,53H,Ps)

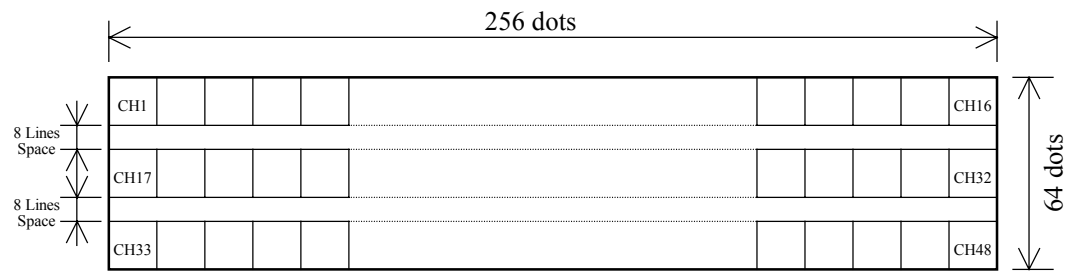
Table -10

Ps	Screen mode	Note
1(31H)	5×7 dots 8rows	
2(32H)	16×16dots, 8×16dots 3rows	default
3(33H)	24×24dots, 12×24dots 2rows	
4(34H)	24×24dots 1row+16×16dots 2rows (12×24dots, 8×16dots)	
5(35H)	16×16dots, 8×16dots 4rows	
6(36H)	4×7(Indicator)+16×16dots 3rows, 8×16dots 3rows	
7(37H)	16×16dots 3rows, 8×16dots 3rows+4×7(Indicator)	

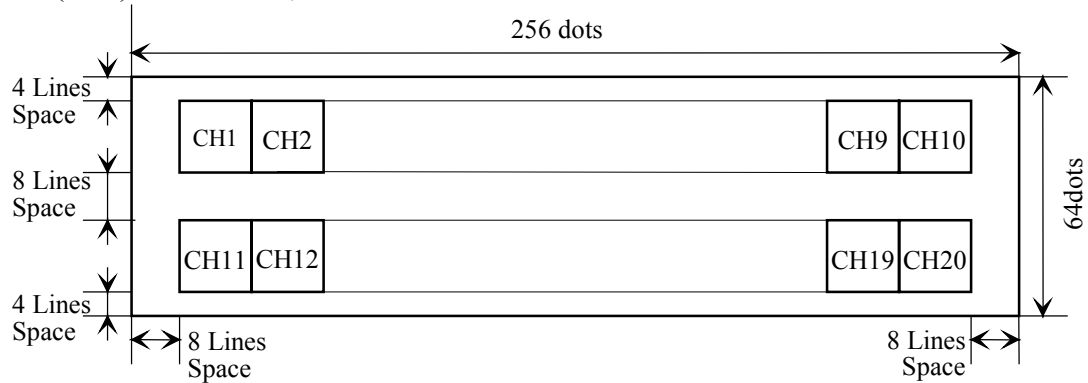
Ps=1 (31H) / 5×7 dots with 8 rows



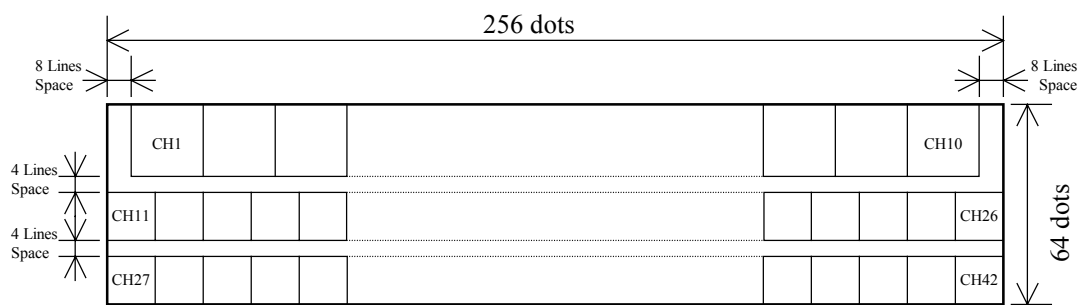
Ps=2 (32H) / 16×16dots, 8×16dots with 3 rows



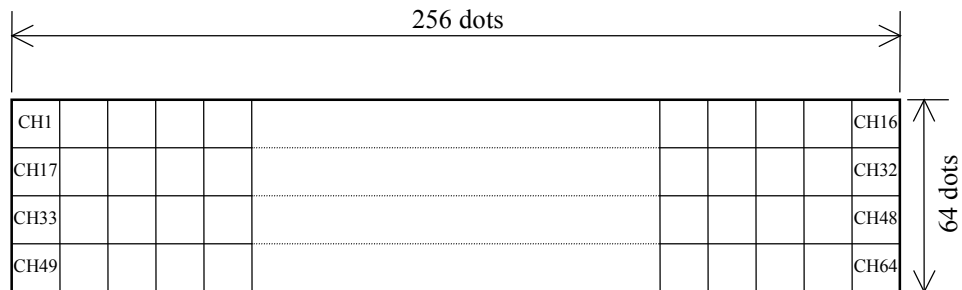
Ps=3 (33H) / 24×24dots, 12×24dots with 2 rows



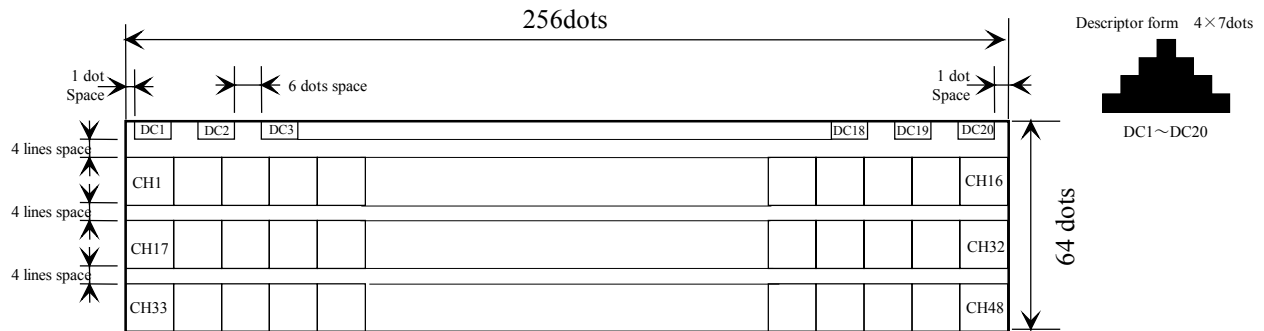
Ps=4 (34H) / 24×24dots with 1 row+16×16dots with 2 rows (12×24dots, 8×16dots)



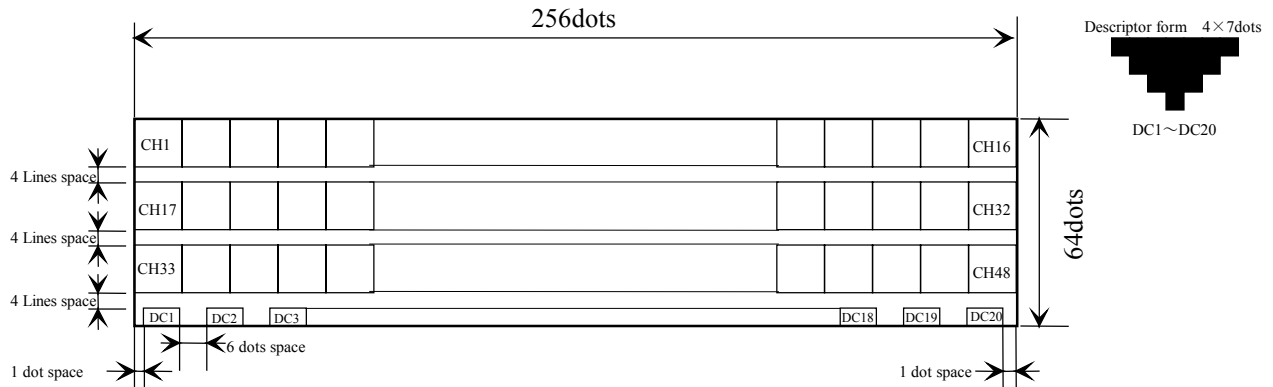
Ps=5 (35H) / 16×16dots, 8×16dots with 4 rows



Ps=6 (36H) / $4 \times 7\text{dots}(\text{Descriptor}) + 16 \times 16\text{dots}$, $8 \times 16\text{dots}$ with 3 rows



Ps=7 (37H) / $16 \times 16\text{dots}$, $8 \times 16\text{dots}$ with 3 rows + $4 \times 7\text{dots}(\text{Descriptor})$



3-3-10. Horizontal scroll

(1BH,5CH,3FH,4CH,48H,Pm,3BH,Pl,3BH,Pt,3BH,Pn,3BH,Pd...Pd)

Table -11

Pm	Screen mode set (Other screen modes except the following are invalid.) 1 (31H) : $5 \times 7\text{dots}$, 8rows 2 (32H) : $16 \times 16\text{dots}$, $8 \times 16\text{dots}$, 3rows 3 (33H) : $24 \times 24\text{dots}$, $12 \times 24\text{dots}$, 2rows 4 (34H) : $24 \times 24\text{dots}$, 1row+ $16 \times 16\text{dots}$, 2rows 5 (35H) : $16 \times 16\text{dots}$, $8 \times 16\text{dots}$, 4rows 6 (36H) : Upward descriptor+ 16×16 8×16 3rows(Descriptor fixation) 7 (37H) : Downward descriptor+ 16×16 8×16 3rows(Descriptor fixation)
Pl	Select a row to be scrolled 1 ~ 8 (31H~38H) : Pm=1 1 ~ 3 (31H~33H) : Pm=2,4,6,7 1, 2 (31H,32H) : Pm=3 1 ~ 4 (31H~34H) : Pm=5
Pt	Scroll speed select 1 (31H) : 1 line/40mS 2 (32H) : 1 line/80mS 3 (33H) : 1 line/160mS
Pn	The number of data (The half size letter=1, the full size letter=2) Max.128(80H)bytes
Pd	Data code

The basic function for scrolling

- 1) When a character is displayed on the line selected for the scroll mode, all displaying characters and the display mode set command are erased.

- 2) A character is scrolled by closed loop until the cancellation command is selected.
In this case, a same message is scrolled repeatedly with no space.
- 3) A screen is scrolled to the left from the right dot by dot.
- 4) The range of the display of being scrolled is defined according to the screen mode setting.
- 5) The command is canceled, when Pn = 00 H
After canceled, displayed characters are cleared and the write-in position moves to the most significant digit of the row.
- 6) The command can be executed in a single line only.
- 7) A character's display mode set command (reverse/blink mode etc.) can be added with the display data frame.
In case the command is written twice or more in one scroll data frame, the first command is only valid and others are ignored.
- 8) When a message data are changed, this command has to be set again.
While scrolling, a user definable font command is not available.

3-3-11. Display mode set (1BH,5BH,Ps,6DH)

Ps=0(30H) Reset of Character attribution set (Blinking/Reverse mode).

The displaying mode of characters written in following this code are reset to normal display mode.

Ps=5(35H) Blinking mode set.

The displayed characters written in following this code are repeated ON and OFF every 0.3 seconds.

Ps=7(37H) Reverse mode set.

The displayed characters written in following this code are reversed.

3-3-12. User definable font set (1BH,5CH,3FH,4CH,57H,Pf,3BH,Pn,3BH,Pc,3BH,Pd...Pd)

These fonts are stored in the module as follows.

Table-12

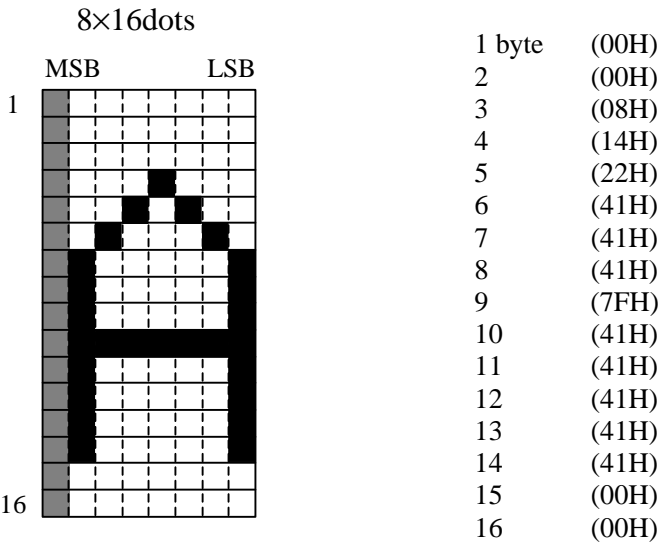
Pf : Font size	1(31H): 5×7dots 2(32H): 8×16dots 3(33H): 16×16dots 4(34H): 12×24dots 5(35H): 24×24dots
Pn : Font No.	1~32(31H~33H,32H) (Pf =1, 2, 4) 1~16(31H~31H,36H) (Pf = 3,5)
Pc : Registration address	2digits HEX (Pf = 1,2,4) 4digits HEX (Pf = 3,5)
Pd : Font data	(2digits HEX) × 6 (Pf = 1) (2digits HEX) × 16 (Pf = 2) (2digits HEX) × 2 × 16 (Pf = 3) (2digits HEX) × 2 × 24 (Pf = 4) (2digits HEX) × 3 × 24 (Pf = 5)

User definable font set, it displays a character with the code of the Pc.

All data specified are stored into the RAM.

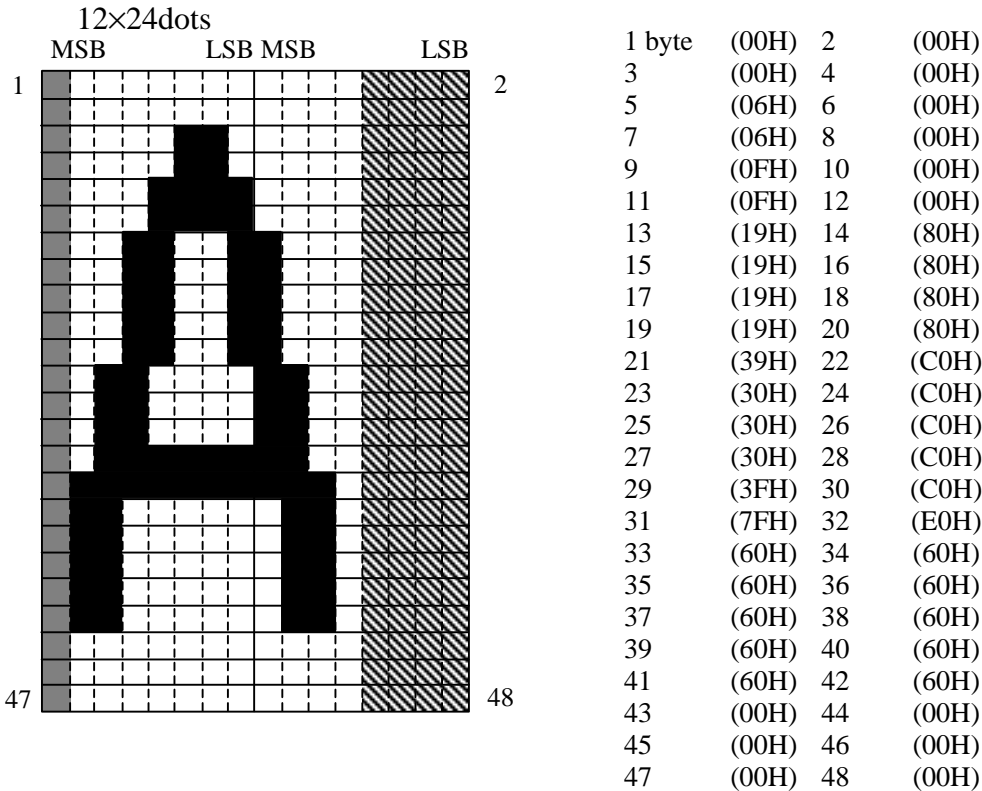
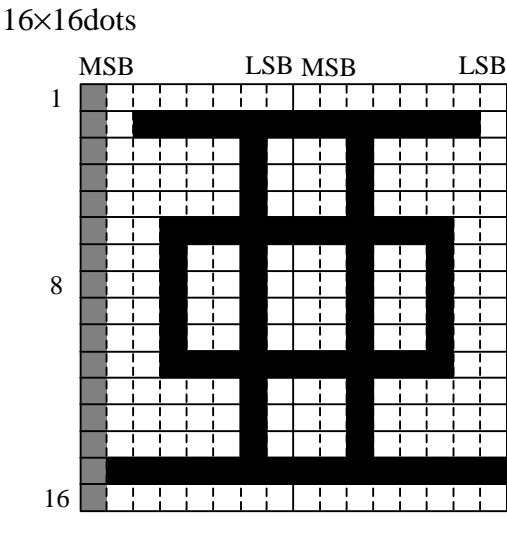
The module has no backup system for the memory so that restore is needed when power on.

The format of the font (Ex.)

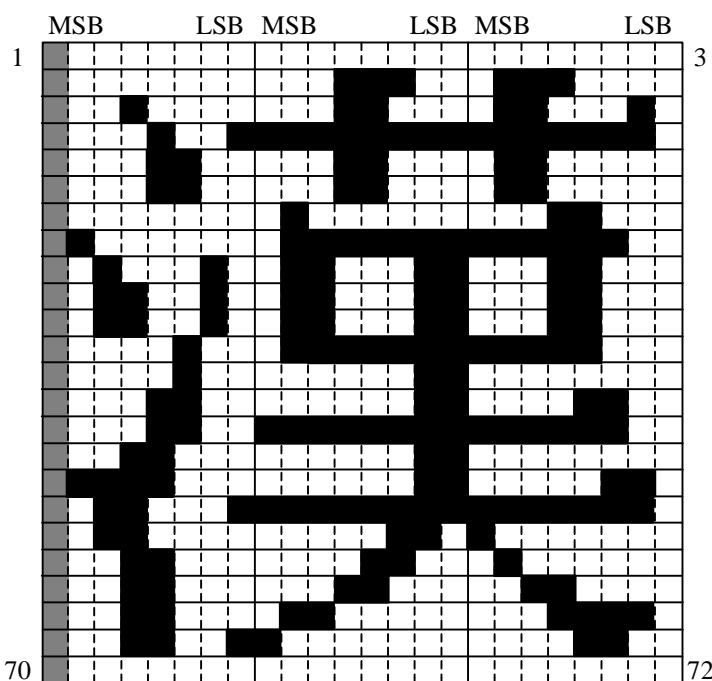


■ The space

No space to a next character if used the line.



24×24dots



1	(00H)	2	(00H)	3	(00H)
4	(00H)	5	(1CH)	6	(70H)
7	(10H)	8	(18H)	9	(62H)
10	(09H)	11	(FFH)	12	(FEH)
13	(0CH)	14	(18H)	15	(60H)
16	(0CH)	17	(18H)	18	(60H)
19	(00H)	20	(40H)	21	(18H)
22	(40H)	23	(7FH)	24	(FCH)
25	(22H)	26	(63H)	27	(18H)
28	(32H)	29	(63H)	30	(18H)
31	(32H)	32	(63H)	33	(18H)
34	(04H)	35	(7FH)	36	(F8H)
37	(04H)	38	(03H)	39	(00H)
40	(0CH)	41	(03H)	42	(0CH)
43	(0CH)	44	(FFH)	45	(FCH)
46	(18H)	47	(03H)	48	(00H)
49	(78H)	50	(03H)	51	(06H)
52	(31H)	53	(FFH)	54	(FEH)
55	(30H)	56	(06H)	57	(80H)
58	(18H)	59	(0CH)	60	(40H)
61	(18H)	62	(18H)	63	(30H)
64	(18H)	65	(60H)	66	(1EH)
67	(19H)	68	(80H)	69	(0CH)
70	(00H)	71	(00H)	72	(00H)

3-3-13. Graphic display mode

(1BH,5CH,3FH,4CH,47H,Px,3BH,Py,3BH,Ph,3BH,Pw,3BH,Pd)

Px = The display position0 ~ 255 (30H ~ 31H,35H,35H)

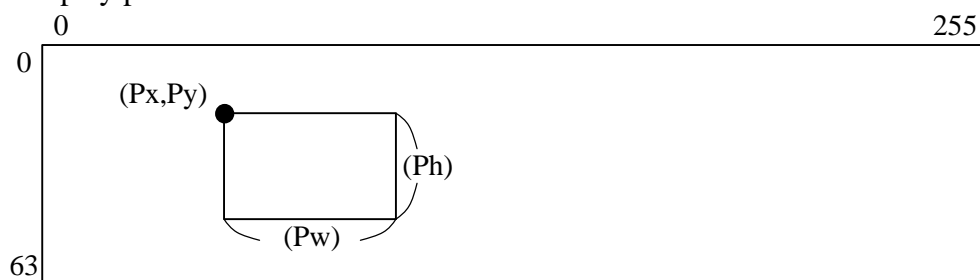
Py = The display position0 ~ 63 (30H ~ 36H,33H)

Ph = The height 1 ~ 64 (31H ~ 36H,34H)

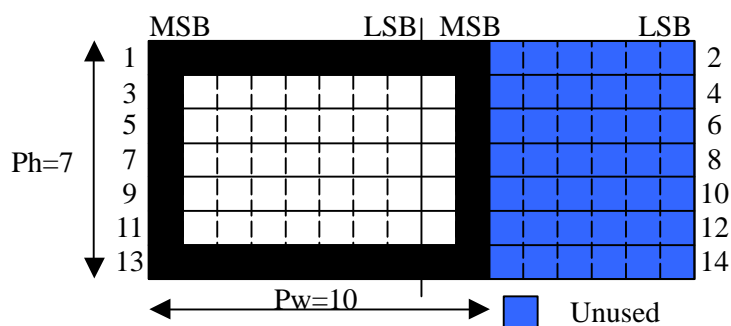
Pw = The width 1 ~ 256 (31H ~ 32H,35H,36H)

Pd = The display data (one byte HEX code)

The display position



The display image (Ex.)



1 byte	(FFH)	2 byte	(C0H)
3	(80H)	4	(40H)
5	(80H)	6	(40H)
7	(80H)	8	(40H)
9	(80H)	10	(40H)
11	(80H)	12	(40H)
13	(FFH)	14	(C0H)

note) The data which is in out of specified display area is ignored.

3-3-14. Double size letter in horizontal (1BH,23H,Ps)

It can be set a character with double size letter in horizontal.

(This is available for all of full size letter, half size letter and ANK font.)

Ps = '5' Normal size letter

Ps = '6' Double size letter in horizontal

Example for 'ABC' characters to be set Double size letter in horizontal.

<1BH><23H><36H><41H><42H><43H><1BH><23H><35H>

3-3-15. Character font data (full size letter)

A character with full size letter can be selected.

3-3-16. Character font data (half size letter)

A character with half size letter can be selected.

3-3-17. Horizontal scroll on all lines (exclusive mode)

1) Scroll mode select command (1BH,5CH,3FH,4CH,4DH,53H)

Horizontal scroll on all lines mode can be selected. It maintains display conditions (e.g. screen mode, cursor position etc.) set before this command is executed.

All commands except the following the release command are ignored.

Scroll start command should be executed, when start scrolling

2) Display mode set (1BH,5CH,3FH,4CH,4DH,pm,3BH,pl,3BH,pn,3BH,pd....pd)

pm	Screen mode set (Other screen modes except the following are invalid.) 1(31H) : 5 × 7dots, 8rows 2(32H) : 16 × 16dots, 8 × 16dots, 3rows 3(33H) : 24 × 24dots, 12 × 24dots, 2rows
pl	Select a row to be scrolled 1 ~ 8 : (31H ~ 38H) pm=1 1 ~ 3 : (31H ~ 33H) pm=2 1 ~ 2 : (31H ~ 32H) pm=3
pt	Scroll speed select 1(31H) : 1digit/10mS 2(32H) : 1digits/20mS
pn	The number of character data (Half size letter=1byte, Full size letter=2bytes), up to 1024 (400H)bytes
pd	Data code

a) Other codes except the above are ignored.

b) The latest display mode set as above becomes effective in one screen scroll setting before scroll start command is executed.

3) Scroll start command (1BH,5CH,3FH,4CH,4DH, 47H)

The screen can be started scrolling.

All commands except the scroll release command are ignored.

note) Space data is written in the other rows except the selected with pl code.

4) Release command of scroll mode (1BH,5CH,3FH,4CH,4DH,45H)

To be released Horizontal scroll on all lines mode.

Display conditions set before this command is executed are reset again.

3-3-18. Descriptor control

Descriptor control (this command is available at the time of Screen mode selection of only for Screen mode 6 and 7)

ESC ¥?DS Ps :1BH,5CH,3FH,44H,53H,Ps(5 bytes)

Ps each bit 1: Lighting, 0:putting out lights

	b7	b6	b5	b4	b3	b2	b1	b0
1 byte	'1' Fixed	'1' Fixed	'1' Fixed	'1' Fixed	DC1	DC2	DC3	DC4
2 byte	'1' Fixed	'1' Fixed	'1' Fixed	'1' Fixed	DC5	DC6	DC7	DC8
3 byte	'1' Fixed	'1' Fixed	'1' Fixed	'1' Fixed	DC9	DC10	DC11	DC12
4 byte	'1' Fixed	'1' Fixed	'1' Fixed	'1' Fixed	DC13	DC14	DC15	DC16
5 byte	'1' Fixed	'1' Fixed	'1' Fixed	'1' Fixed	DC17	DC18	DC19	DC20

Descriptor allotment table

This command is disregarded when Screen Mode differs.

Left end																			Right end	
	DC1	DC2	DC3	DC4	DC5	DC6	DC7	DC8	DC9	DC10	DC11	DC12	DC13	DC14	DC15	DC16	DC17	DC18	DC19	DC20

Above: Screen Mode 6 correspondence/Below: Screen Mode 7 correspondence

When you publish a descriptor control command, please be sure to input 5 bytes of data specified by Ps.

3-3-19. Descriptor blink control (this command is disregarded at the time of Screen mode selection of Screen mode 6 and 7 others)

ESC ¥?DB Ps :1BH,5CH,3FH,44H,42H,Ps(5 bytes)

The turned-on descriptor is blinked (when the descriptor is not on, it is this command disregard). Ps is the same as the above-mentioned descriptor allotment table.

Each bit 1: Blink, 0:blink release (after release is turned on)

Blink time is the same as display attribute blink time.

Cautions

When it specifies zero times by the descriptor control command at the time of a descriptor blink, the light is put out and a blink also cancels a display compulsorily. In 1 specification, a blink is canceled and it lights up.

3-4. The test function

- a) The self memory test: When turned on, the ROM and RAM of a module are tested automatically.
- b) The display test: Test data are displayed on the screen.

3-4-1. The self memory test

The test is automatically started when turned on.

If an error is occurred, RTS signal line of the module becomes disable against a host system to notice the state of reception prohibition.

3-4-2. The display test

The display test starts when one of the following is executed.

When the J6 is short.

When both signal line connections RTS-CTS and RXD-TXD are connected.

The screen shows the following test patterns.

- 1) All dots is turned on.
- 2) Horizontal lines in every one line are turned on.
- 3) Vertical lines in every four line are turned on.
- 4) All dots is turned on.

3-4-3. The display confirmation

When the module is turned on, all dots are turned on for 500 mS.

4. INTERFACE CONNECTION

4-1. Interface configuration

Signal level : RS-232C serial communication
Data transfer format : Un-synchronous and bi-directional communication
Data length : 8bits (LSB first)
Parity bit : Even/Odd/Non(Initial setting:Non)
Start bit : 1 bit
Stop bit : 1 bit
Baud rate : 19200/9600/4800/2400/1200bps
(Initial setting:19200bps)

4-2. Connector pin assignment

Connector : BS8P-SHF-1AA (JST)

Table-13

Pin No	Signal	Description
1	RTS	Output
2	N.C	No connection
3	GND	Ground
4	GND	Ground
5	RXD	Input data
6	N.C	No connection
7	+5V	Supply voltage
8	+5V	Supply voltage

Note) These are signals of the VFD module.

4-3. JUMPER

The following Table-14 indicates the JUMPER setting for baud rate/Parity/self test.

Table-14

JUMPER	Function	Initial setting
J1	Baud rate selection	-
J2		-
J3		○
J4	Parity set	-
J5		-
J6	Self test	-

- :Open
○ :Short

4-3-1. Baud rate selection

It is possible to select a baud rate 1200 to 19200bps by the combination of J1, J2 and J3 of JUMPER as shown below. (Initial setting : 19200bps)

Table-15

J1	○	-	○	-	-
J2	○	○	-	-	-
J3	-	-	-	-	○
Baud rate (bps)	1200	2400	4800	9600	19200

4-3-2. Parity setting

It is possible to set parity bit by the combination of J4 and J5 of the JUMPER as shown below.

(Initial setting : Non parity)

Table-16

J4		J5	
○	-	○	-
Parity	Non Parity	ODD	EVEN

Note) J5 is effective only when J4 is Short.

4-3-3. The self-test

Either self test mode or normal mode, the J6 has to be set at power on.

It starts the self-test when the J6 is short, at power on.

To release the test mode, the module has to be turned off and the J6 has to be set Open.

(Initial setting : Normal)

Table-17

J6	
○	-
Self-test	Normal

ANK Character

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P	`	n	.	.	?	-	々	ミ	.	.
1			!	1	A	O	a	n	.	.		ア	チ	ル	.	.
2			"	2	R	R	h	r	.	.	Γ	イ	ウ	ス	.	.
3			#	3	C	S	c	s	.	.	ι	ウ	テ	フ	.	.
4			\$	4	D	T	d	t	.	.		ト	ト	ヤ	.	.
5			%	5	F	II	e	n	.	.	.	オ	十	リ	.	.
6			&	6	F	V	f	v	.	.	ヲ	カ	一	コ	.	.
7			'	7	G	W	σ	w	.	.	ア	キ	又	ラ	.	.
8			(	8	H	X	h	x	.	.	イ	ク	ス	リ	.	.
9			)	9	I	Y	i	y	.	.	ウ	ケ	ノ	ル	.	.
A			*	.	I	Z	i	z	.	.	τ	リ	ル	レ	.	.
B			+	.	K	Γ	k	Γ	.	.	オ	サ	レ	ル	.	.
C				<	I	¥	l	l	.	.	カ	シ	フ	ル	.	.
D			-	=	M	l	m	l	.	.	リ	ミ	ハ	ソ	.	.
E				>	N	^	n	~	.	.	コ	ハ	ホ	'	.	.
F			/	?	O		o	•	.	.	ウ	リ	マ	'	.	.

FONT for Japan Shift JIS

01	4	5	6	7	8	9	A	B	C	D	E	F
0			~	リ	÷	\$.	.	.		
1	、				=	¢		.	.	.		‰
2	。	、	|		£		.	.	.			
3	、	ゞ	...		<	%		.	.	.		
4	.	ゝ		》	>	#		.	.	.		
5	.	ゞ	'	|		&		.	.	.		†
6	:	"	'	」		*		.	.	.		‡
7	;	全	“	|		@	〒	.	.	.		¶
8	?	々	”	』		§				.		.
9	!	／	(	|						.	.	.
A	、	○	)	】					Γ		.	.
B	°	一	|	+	°						.	.
C	']	-		=					.	.
D	`		|	±			.				.	.
E	ˆ	/	|	×			.				.	.
F	/	\	+	.	¥		.		.		.	.

02	4	5	6	7	8	9	A	B	C	D	E	F
0	.	1	A	Q	.	¢	あ	げ	ぢ	ひ	も	を
1	.	2	B	R	€	c	い	こ	っ	び	や	ん
2	.	3	C	S	¢	l	い	ご	っ	び	や	.
3	.	4	D	T	¢	€	さ	づ	ふ	ゆ	.	.
4	.	5	E	U	¢	1	さ	て	ぶ	ゆ	.	.
5	.	6	F	V	€	l	え	し	で	ぶ	よ	.
6	.	7	G	W	τ	、	え	じ	と	へ	よ	.
7	.	8	H	X	€	w	お	ず	ど	べ	ら	.
8	.	9	、	Y	h	x	お	ず	な	べ	り	.
9	.	.	.	Z		v	か	せ	に	ほ	る	.
A	.	.	K	.		z	が	ぜ	ぬ	ぼ	れ	.
B	.	.	L	.	k	.	き	そ	ね	ぼ	ろ	.
C	.	.	M	.		.	ぎ	ぞ	の	ま	わ	.
D	.	.	N	.	m	.	く	た	は	み	わ	.
E	.	.	O	.	r	.	く	だ	ば	む	ゐ	.
F	0	.	P	.	c		あ	け	ち	ば	め	系

02	4	5	6	7	8	9	A	B	C	D	E	F
0	ア	ケ	チ	パ	ム	斗					.	.
1	ア	ゲ	ヂ	ヒ	メ	工					.	.
2	イ	コ	ッ	ビ	モ	ラ					.	.
3	イ	コ	ツ	ビ	ヤ	ン					.	.
4	ウ	サ	ツ	フ	ヤ	ヴ					.	.
5	ウ	ザ	テ	ブ	ユ	カ					.	.
6	エ	シ	デ	ブ	ユ	ケ					.	.
7	エ	ジ	ト	ヘ	ミ	.		.		.	.	.
8	オ	ス	ト	ベ	ミ
9	オ	ズ	ナ	ペ	ラ
A	カ	セ	ニ	ホ	リ	.		.	μ	.	.	.
B	ガ	ゼ	ヌ	ボ	ル
C	キ	ソ	ネ	ボ	レ
D	ギ	ゾ	ノ	マ	ロ
E	ク	タ	ハ	ミ	ワ
F	グ	ダ	バ	.	ワ					.	.	.

04	4	5	6	7	8	9	A	B	C	D	E	F
0										.	.	.
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1	陰	渦	餌	衛	堰	苑	橫	桶	加	禾	蚊	回
2	隱	噓	叢	詠	奄	園	歐	牡	可	稼	俄	塊
3	韻	唄	營	銳	宴	遠	毆	乙	嘉	箇	峨	壞
4	吋	鬱	嬰	液	延	鉛	王	俺	夏	花	我	迴
5	右	蔚	影	疫	怨	鴛	翁	卸	嫁	苛	牙	快
6	宇	鰻	映	益	掩	塩	襖	恩	家	茄	画	怪
7	烏	姥	曳	馭	援	於	鶯	溫	寡	荷	臥	悔
8	羽	廐	米	悅	沿	汚	鷗	穩	科	華	芽	恢
9	迂	浦	永	謁	演	甥	黃	音	暇	菓	蛾	懷
A	雨	瓜	泳	越	炎	凹	岡	下	果	蝦	賀	戒
B	卯	閨	洩	閱	焰	央	沖	化	架	課	雅	拐
C	鵲	噲	瑛	榎	煙	奧	荻	飯	歌	嘩	餓	改
D	窺	云	盈	厭	燕	往	億	何	河	貨	駕	·
E	丑	運	穎	円	猿	忝	屋	伽	火	迦	介	·
F	確	雲	穎	·	緣	押	憶	価	珂	過	会	·

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1	歸	飢	蟻	客	求	拒	僑	恭	驚	錦	吟	虞
2	毅	騎	誼	脚	汲	拋	兇	挾	仰	斤	銀	喰
3	氣	鬼	議	虐	泣	拳	競	教	凝	欣	九	空
4	汽	龜	掬	逆	灸	渠	共	橋	堯	欽	俱	偶
5	畿	偽	菊	丘	球	虛	凶	況	曉	琴	句	寓
6	祈	儀	鞠	久	究	許	協	狂	業	禁	区	遇
7	季	妓	吉	仇	窮	距	匡	狹	局	禽	狗	隅
8	稀	宜	吃	休	笈	鋸	卿	矯	曲	筋	玖	串
9	紀	戲	喫	及	級	漁	叫	胸	極	緊	矩	櫛
A	徽	技	桔	吸	糾	禦	喬	脅	玉	芹	苦	釧
B	規	擬	橘	宮	給	魚	境	興	桐	菌	軀	屑
C	記	欺	詰	弓	旧	亨	峽	蕎	籽	衿	驅	屈
D	貴	犧	砧	急	牛	享	強	鄉	僅	襟	駢	·
E	起	疑	杵	救	去	京	彊	鏡	勤	謹	駒	·
F	軌	祇	黍	·	居	供	怯	響	均	近	具	·

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0	掘	訓	形	繼	劇	俟	樞	頸	限	糊	吳	交
1	窟	群	徑	繫	戟	倦	牽	驗	乎	袴	吾	佼
2	沓	軍	惠	毆	擊	健	犬	缺	個	股	娛	侯
3	靴	郡	慶	莖	激	兼	猷	元	古	胡	後	候
4	轡	卦	慧	荊	隙	券	研	原	呼	菰	御	倖
5	窪	袈	憩	蚩	桁	劍	硯	嚴	固	虎	悟	光
6	熊	祁	揭	計	傑	喧	絹	幻	姑	誇	梧	公
7	隈	係	携	詣	欠	圈	梟	弦	孤	跨	檣	功
8	桑	傾	敬	警	決	堅	肩	減	己	鈷	瑚	効
9	栗	刑	景	輕	潔	嫌	見	源	庫	雇	暮	勾
A	縲	兄	桂	頸	穴	建	謙	玄	弧	顧	語	厚
B	桑	啓	溪	鷄	結	憲	賢	現	戶	鼓	誤	口
C	鉤	圭	畦	芸	血	懸	軒	絃	故	五	護	向
D	勲	珪	稽	迎	訣	拳	遣	絃	枯	互	酬	·
E	君	型	系	鯨	月	捲	鍵	言	湖	伍	乞	·
F	薰	契	經	·	件	檢	險	諺	狐	午	鯉	·

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0	后	恒	港	膏	項	告	頃	魂	座	災	財	昨
1	喉	慌	溝	航	香	国	今	些	挫	采	呀	朔
2	坑	抗	甲	荒	高	穀	困	佐	債	犀	坂	柵
3	垢	拘	皇	行	鴻	酷	坤	叉	催	碎	阪	窄
4	好	控	硬	衡	剛	鵠	壟	唆	再	砦	堺	策
5	孔	攻	稿	講	劫	黑	婚	嵯	最	祭	桷	索
6	孝	昂	糠	貢	号	獄	恨	左	哉	齋	肴	錯
7	宏	晃	紅	購	合	漉	懇	差	塞	細	咲	桜
8	工	更	絃	郊	壕	腰	昏	查	妻	菜	崎	鮭
9	巧	杭	絞	酵	拷	甌	昆	沙	宰	裁	埼	笹
A	巷	校	綱	鉉	濠	忽	根	瑤	彩	載	碕	匙
B	幸	梗	耕	砧	豪	惚	梱	砂	才	際	鷺	冊
C	広	構	考	鋼	轟	骨	混	詐	採	劑	作	刷
D	庚	江	肯	閣	鞠	狛	痕	鎖	栽	在	削	·
E	康	洪	肱	降	克	込	紺	裳	歲	材	咋	·
F	弘	浩	腔	·	刻	此	良	坐	濟	罪	搾	·

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0	察	傘	餐	姿	死	諮	滋	鳴	寔	社	錫	酒
1	撈	參	斬	子	氏	資	治	竺	蔀	紗	若	首
2	撮	山	暫	屍	獅	賜	爾	軸	篠	者	寂	儒
3	擦	慘	殘	市	祉	雌	璽	穴	僂	謝	弱	受
4	札	撒	仕	師	私	飼	痔	零	柴	車	惹	呪
5	殺	散	仔	志	糸	齒	磁	七	芝	遮	主	寿
6	薩	棧	伺	思	紙	事	示	叱	屢	蛇	取	授
7	雜	燦	使	指	紫	似	而	執	蕊	邪	守	樹
8	皐	珊	刺	支	肢	侍	耳	失	縞	借	手	綬
9	鯖	產	司	孜	脂	児	自	嫉	舍	勺	朱	需
A	捌	算	史	斯	至	字	時	室	写	尺	殊	囚
B	鑄	纂	嗣	施	視	寺	辭	悉	射	杓	狩	収
C	鮫	蚕	四	旨	詞	慈	汐	湿	捨	灼	珠	周
D	皿	讚	士	枝	詩	持	鹿	漆	赦	爵	種	·
E	晒	贊	始	止	試	時	式	疾	斜	酌	腫	·
F	三	酸	姉	·	誌	次	識	質	煮	糶	趣	·

0F	A	S	C	7	9	0	A	B	C	D	E	F
0	宗	襲	汁	術	準	署	匠	床	沼	紹	鐘	条
1	就	讐	洩	述	潤	書	升	廠	消	肖	障	杖
2	州	蹴	獸	俊	盾	薯	召	彰	涉	萑	鞘	淨
3	修	輯	縱	峻	純	諸	哨	承	湘	蔣	上	狀
4	愁	週	重	春	巡	諸	商	抄	燒	蕉	丈	量
5	拾	茜	銑	瞬	遵	助	唱	招	焦	衝	丞	穰
6	洲	酬	叔	竣	醇	叙	嘗	掌	照	裳	乘	蒸
7	秀	集	夙	舜	順	女	獎	捷	症	訟	冗	讓
8	秋	醜	宿	駿	処	序	妾	昇	省	証	剩	釀
9	終	什	淑	准	初	徐	娼	昌	硝	詔	城	錠
A	繡	住	祝	循	所	恕	宵	昭	礁	詳	場	囑
B	習	充	縮	旬	暑	鋤	將	晶	祥	象	壤	埴
C	臭	十	肅	楯	曙	除	小	松	称	賞	孃	飾
D	舟	從	塾	殉	渚	傷	少	梢	章	醬	常	·
E	菟	戎	熟	淳	庶	償	尚	樟	笑	鉦	情	·
F	衆	柔	出	·	緒	勝	庄	樵	粧	鍾	擾	·

00	A	S	C	7	9	0	A	B	C	D	E	F
0	拭	娠	秦	壬	逗	瑞	摺	晴	逝	籍	說	栓
1	植	寢	紳	尋	吹	髓	寸	棲	醒	績	雪	桤
2	殖	審	臣	甚	垂	崇	世	栖	青	脊	絕	泉
3	燭	心	芯	尽	帥	嵩	瀨	正	靜	責	舌	淺
4	織	慎	薪	賢	推	數	畝	清	齊	赤	蟬	洗
5	職	振	親	訊	水	樞	是	牲	稅	跡	仙	染
6	色	新	診	迅	炊	趨	淒	生	脆	蹟	先	潛
7	觸	晉	身	陣	睡	難	制	盛	隻	碩	千	煎
8	食	森	辛	勒	粹	据	勢	精	席	切	占	煽
9	蝕	榛	進	筍	翠	杉	姓	聖	惜	拙	宣	旋
A	辱	浸	針	諏	衰	相	征	声	戚	接	專	穿
B	尻	深	震	須	遂	菅	性	製	斥	摂	尖	箭
C	伸	申	人	酢	醉	頗	成	西	昔	折	川	線
D	信	疹	仁	囟	錐	雀	政	誠	析	設	戰	·
E	侵	真	刃	厨	錘	裾	整	誓	石	窃	扇	·
F	唇	神	塵	·	隨	澄	星	請	積	節	撰	·

01	A	S	C	7	9	0	A	B	C	D	E	F
0	纖	善	疏	叢	操	草	蔵	族	訖	岱	隊	扞
1	羨	漸	疎	倉	早	莊	贈	統	唾	帶	黨	拓
2	腺	然	礎	喪	曹	葬	造	卒	墮	待	鯛	沢
3	舛	全	祖	壯	巢	蒼	促	袖	妥	怠	代	濯
4	船	禪	租	奏	槍	藻	側	其	情	態	台	琢
5	薦	繕	粗	爽	槽	装	則	揃	打	戴	大	託
6	詮	膳	素	宋	漕	走	即	存	柁	替	第	鐸
7	賤	糲	組	層	燥	送	息	孫	舵	泰	醍	濁
8	踐	噌	蘇	匠	爭	遭	捉	尊	楫	滯	題	諾
9	選	塑	訴	惣	瘦	鎗	束	損	陀	胎	鷹	茸
A	遷	岨	阻	想	相	霜	測	村	駄	腿	淹	夙
B	錢	措	遡	搜	窓	騷	足	遜	驛	苔	瀧	蛸
C	銑	曾	鼠	掃	糟	像	速	他	体	袋	卓	只
D	閃	曾	僧	挿	総	増	俗	多	堆	貸	啄	·
E	鮮	楚	創	搔	綜	憎	属	太	对	退	宅	·
F	前	狙	双	·	聡	臍	賊	汰	耐	逮	托	·

02	A	S	C	7	9	0	A	B	C	D	E	F
0	叩	单	蛋	恥	逐	註	帳	腸	賃	漬	亭	挺
1	但	嘆	誕	智	秩	酎	庁	蝶	鎮	柘	低	提
2	達	坦	鍛	池	室	鑄	弔	調	陳	辻	停	梯
3	辰	担	団	痴	茶	駐	張	謀	津	薦	偵	汀
4	奪	探	壇	稚	嫡	檣	彫	超	墜	綴	剃	錠
5	脱	旦	彈	置	着	瀦	徵	跳	椎	鏢	貞	禎
6	巽	歎	断	致	中	猪	懲	銚	槌	椿	呈	程
7	豎	淡	暖	蚰	仲	芋	挑	長	追	漬	堤	締
8	辿	湛	檀	遲	宙	著	暢	頂	鎚	坪	定	艇
9	棚	炭	段	馳	忠	貯	朝	鳥	痛	壺	帝	訂
A	谷	短	男	築	抽	丁	潮	勅	通	嫖	底	諦
B	狸	端	談	畜	昼	兆	牒	抄	塚	紬	庭	蹄
C	鱈	筆	値	竹	柱	凋	町	直	梅	爪	廷	遁
D	樽	綻	知	筑	注	喋	眺	朕	掴	吊	弟	·
E	誰	耽	地	蓄	虫	寵	聰	沈	槻	釣	悌	·
F	丹	胆	弛	·	衷	帖	脹	珍	佃	鶴	抵	·

03	A	S	C	7	9	0	A	B	C	D	E	F
0	邸	撤	伝	菟	凍	盜	蕩	堂	洸	寅	内	汝
1	鄭	轍	殿	賭	刀	淘	藤	導	特	酉	乍	二
2	釘	迭	澱	途	唐	湯	討	懂	督	潯	凧	尼
3	鼎	鉄	田	都	塔	涛	騰	撞	禿	噸	薙	式
4	泥	典	電	鍍	塘	灯	豆	洞	篤	屯	謎	迎
5	摘	填	兎	砥	套	燈	踏	瞳	毒	惇	灘	勾
6	擢	天	吐	砺	宕	当	逃	童	独	敦	捺	賑
7	敵	展	堵	努	島	痘	透	胴	読	沌	鍋	肉
8	滴	店	塗	度	嶋	禱	鐙	萄	析	豚	檣	虹
9	的	添	妬	士	悼	等	陶	道	橡	遁	馴	廿
A	笛	纏	屠	奴	投	答	頭	銅	凸	頓	縄	日
B	適	甜	徒	怒	搭	筒	騰	峠	突	吞	噉	乳
C	鎬	貼	斗	倒	東	糖	鬪	鴛	椈	曇	南	入
D	溺	軫	杜	党	桃	統	働	匿	届	鈍	楠	·
E	哲	顛	渡	冬	桼	到	動	得	薦	奈	軟	·
F	徹	点	登	·	棟	董	同	德	苦	那	難	·

04	A	S	C	7	9	0	A	B	C	D	E	F
0	如	捻	硯	麋	煤	柏	箱	伐	搬	頒	扉	避
1	尿	撚	蚤	捋	煤	泊	砒	罰	斑	飯	批	非
2	菲	燃	巴	排	猥	白	箸	拔	扳	挽	披	飛
3	任	粘	把	敗	買	箔	肇	筏	汜	晚	斐	樋
4	妊	乃	播	杯	壳	粕	筭	閥	汎	番	比	簸
5	忍	迺	霸	盃	賠	舶	櫨	鳩	版	盤	泌	備
6	認	之	杷	牌	陪	薄	幡	嘶	犯	磐	疲	尾
7	濡	埜	波	背	這	迫	肌	塙	班	蕃	皮	微
8	襴	囊	派	肺	蠅	曝	畑	蛤	畔	壘	碑	枇
9	祢	惱	琶	輩	秤	漠	畠	隼	繁	匪	秘	毘
A	寧	濃	破	配	矧	爆	八	伴	般	卑	緋	琵琶
B	葱	納	婆	倍	萩	縛	鉢	判	藩	否	罷	眉
C	猫	能	罵	培	伯	莫	滌	半	販	妃	肥	美
D	熱	腦	芭	媒	剥	駁	癸	反	範	庇	被	·
E	年	膿	馬	梅	博	麦	醜	叛	采	彼	誹	·
F	念	農	俳	·	拍	函	髮	帆	煩	悲	費	·

05	A	S	6	7	8	9	A	B	C	D	E	F
0	鼻	姬	描	頻	斧	武	腹	焚	並	片	步	呆
1	柁	媛	病	敏	普	舞	複	奮	蔽	篇	甫	報
2	稗	紐	秒	瓶	浮	葡	覆	粉	閉	編	補	奉
3	匹	百	苗	不	父	蕪	淵	糞	陞	辺	輔	宝
4	足	謬	錨	付	符	部	弗	紛	米	返	穗	峰
5	髭	依	鉅	埠	腐	封	弘	雰	頁	遍	募	峯
6	彥	彪	赫	夫	膚	楓	沸	文	僻	便	墓	崩
7	膝	標	蛭	婦	芙	風	仏	聞	壁	勉	慕	庖
8	菱	冰	鰭	富	譜	葦	物	丙	癖	婉	戊	抱
9	肘	漂	品	富	負	蒨	鮒	併	碧	弁	暮	捧
A	粥	瓢	彬	布	賦	伏	分	兵	別	鞭	母	放
B	必	票	斌	府	赴	副	吻	塀	瞥	保	簿	方
C	畢	表	浜	怖	阜	復	噴	幣	蔑	鋪	菩	朋
D	筆	評	瀕	扶	附	幅	墳	平	篋	鋪	倣	・
E	逼	豹	貧	敷	侮	服	憤	弊	偏	圃	俸	・
F	松	廟	賓	・	撫	福	扮	柄	变	捕	包	・

06	A	S	6	7	8	9	A	B	C	D	E	F
0	法	鳳	冒	朴	摩	鱒	蔓	眠	迷	孟	初	役
1	泡	鵬	紡	牧	磨	桡	味	務	銘	毛	貰	約
2	烹	乏	肪	睦	魔	亦	未	夢	鳴	猛	問	藥
3	砲	亡	膨	穆	麻	俟	魅	無	姪	盲	悶	訊
4	縫	傍	謀	釦	埋	又	已	牟	牝	網	紋	躍
5	胞	剖	貌	勃	妹	抹	箕	矛	滅	耗	門	靖
6	芳	坊	貿	沒	昧	未	岬	霧	免	蒙	匆	柳
7	萌	妨	銓	殆	枚	沫	密	鷓	棉	儲	也	藪
8	蓬	帽	防	堀	每	迄	蜜	棕	綿	木	冶	鏈
9	蜂	忘	吠	幌	俚	湊	婿	緬	默	夜	愉	・
A	褒	忙	頰	奔	楨	蔭	蕘	娘	面	目	爺	愈
B	訪	房	北	本	幕	磨	稔	冥	麵	空	耶	油
C	豐	暴	僕	翻	膜	万	脈	名	摸	勿	野	癒
D	邦	望	卜	凡	枕	慢	妙	命	模	餅	弥	・
E	鋒	某	墨	盆	鮪	滿	耗	明	茂	尤	矢	・
F	飽	棒	撲	・	枉	漫	民	盟	妄	戾	厄	・

07	A	S	6	7	8	9	A	B	C	D	E	F
0	諭	猶	輿	用	沃	乱	裏	硫	梁	厘	伶	歷
1	輪	猷	預	窯	浴	卵	裡	粒	涼	林	例	列
2	唯	由	傭	羊	翌	嵐	里	隆	獺	淋	冷	劣
3	佑	祐	幼	耀	翼	欄	離	竜	療	熾	勵	烈
4	優	裕	妖	葉	淀	濫	陸	龍	瞭	琳	嶺	裂
5	勇	誘	容	蓉	羅	藍	律	侶	稜	臨	伶	廉
6	友	遊	庸	要	螺	蘭	率	慮	糧	輪	玲	恋
7	宥	邑	揚	謠	裸	覽	立	旅	良	隣	礼	憐
8	幽	郵	搖	踊	來	利	律	虜	諒	鱗	苓	漣
9	悠	雄	擁	遙	萊	吏	掠	了	遼	麟	鈴	煉
A	憂	融	曜	陽	賴	履	略	亮	量	璫	隸	簾
B	揖	夕	楊	養	雷	李	劉	僚	陵	壘	零	練
C	有	予	樣	慾	洛	梨	流	兩	領	淚	靈	聯
D	柚	余	洋	抑	絡	理	溜	凌	力	累	麗	・
E	湧	与	溶	欲	落	璃	琉	寮	綠	類	齡	・
F	涌	譽	熔	・	酪	痢	留	料	倫	令	曆	・

08	A	S	6	7	8	9	A	B	C	D	E	F
0	蓮	榔	倭	灣	・	・	丐	于	仟	侑	倨	會
1	連	浪	和	碗	・	・	丕	亞	价	佯	倔	偕
2	鍊	漏	話	腕	・	・	个	亟	伉	來	倪	修
3	呂	牢	歪	・	・	・	卬	一	佚	侖	倥	偈
4	魯	狼	賄	・	・	・	丿	亢	估	儘	倅	倣
5	櫓	箆	脇	・	・	・	井	京	佛	倪	倅	偕
6	炉	老	惑	・	・	・	丿	毫	佻	俟	倣	偕
7	賂	豐	杵	・	・	・	乂	亶	佗	俎	倡	偷
8	路	蛾	驚	・	・	・	乖	从	佇	俘	倩	傀
9	露	郎	互	・	・	・	乘	仍	佶	俛	倅	倣
A	勞	六	巨	・	・	・	亂	仄	侈	倂	倅	倣
B	婁	麓	鰐	・	・	・	丿	仆	侏	俚	倂	倣
C	廊	祿	詫	・	・	・	豫	仉	佗	俐	們	倣
D	弄	肋	藁	・	・	・	爭	仗	佻	倂	們	倣
E	朗	錄	蕨	・	・	・	舒	仞	佩	倂	們	倣
F	樓	論	椀	・	・	・	式	式	仍	佰	倚	倣

09	A	S	6	7	8	9	A	B	C	D	E	F
0	僉	儕	兪	冪	凰	劬	匆	卅	厰	吭	咀	・
1	僊	僊	兮	丿	𠂔	剔	劬	匈	卉	𠂔	吼	呶
2	傳	僊	冀	決	函	剪	劬	甸	𠂔	參	吮	咄
3	僊	僊	𠂔	𠂔	刃	剗	劬	匍	準	纂	吮	附
4	僊	僊	回	冲	刊	剩	勁	匍	𠂔	雙	吩	咆
5	僊	僊	册	冰	刳	剗	劬	匍	𠂔	叟	吝	哇
6	僊	僊	冉	況	刳	剗	劬	𠂔	𠂔	曼	呖	骂
7	僊	僊	冏	冽	刳	剗	勞	𠂔	𠂔	變	咏	咸
8	僊	僊	儿	冏	刪	劍	勸	𠂔	卻	叮	呵	啞
9	僊	僊	兀	冏	涼	刮	劬	匍	卷	叨	咎	咬
A	價	兒	冕	凜	刳	劬	飭	匍	𠂔	叭	咭	哄
B	僊	兌	冏	几	剗	劬	勸	匍	𠂔	叭	呱	哈
C	儉	兔	冤	處	刳	劈	勸	𠂔	𠂔	吁	呷	咨
D	僊	兢	冠	冏	剗	劑	勸	區	厦	呷	咭	・
E	儉	競	冏	凭	剗	辨	勸	𠂔	𠂔	呀	咒	・
F	儉	兩	寫	・	刺	辨	𠂔	卅	𠂔	听	呻	・

0A	A	S	6	7	8	9	A	B	C	D	E	F
0	咫	哇	啞	噴	噫	嚼	國	垓	垓	墟	壘	夸
1	晒	啞	啞	嘔	噤	囁	圍	坡	垓	垓	壘	夾
2	咤	啞	喘	嗽	嘯	囁	圓	垓	垓	壘	壘	奇
3	咤	售	啞	噴	噬	囁	團	垓	垓	壘	壘	奕
4	𠂔	啞	單	嗽	噪	囁	圖	垓	垓	壘	壘	奕
5	𠂔	啞	啼	嗽	嚙	囁	圖	垓	垓	壘	壘	奕
6	哥	啞	喃	嘛	嚙	囁	圖	垓	垓	壘	壘	奕
7	哦	啞	喻	噓	嚙	囁	圖	垓	垓	壘	壘	奕
8	唏	啞	唸	噓	嚙	囁	圖	垓	垓	壘	壘	奕
9	唔	啞	唸	噓	嚙	囁	圖	垓	垓	壘	壘	奕
A	哽	啞	鳴	營	嚙	囁	圖	垓	垓	壘	壘	奕
B	哮	啞	嗅	嚙	嚙	囁	圖	垓	垓	壘	壘	奕
C	哭	咯	嗟	嘶	嚙	囁	圖	垓	垓	壘	壘	奕
D	哺	咯	嘎	嘲	嚙	囁	圖	垓	垓	壘	壘	奕
E	哧	喊	嗜	嚙	嚴	囁	圖	垓	垓	壘	壘	奕
F	啞	啞	啞	・	囁	囁	圖	垓	垓	壘	壘	奕

OP	A	S	G	7	8	9	A	B	C	D	E	F
0	奸	娜	嬌	娥	它	寶	屏	岷	崑	嶢	厄	幣
1	灼	娉	嫗	孀	宦	尅	孱	岵	崔	嶝	帛	幫
2	妝	甥	嫦	子	宸	將	屬	峇	崢	嶢	帛	开
3	佞	姘	嫩	孕	冤	專	屮	峙	峻	嶮	帙	并
4	佞	姪	嫖	孚	寇	對	屮	義	崙	嶽	帑	么
5	妣	婉	嫻	孛	崔	尔	岌	峽	崙	隆	帛	麼
6	妲	嫗	嫻	孛	寔	眇	屹	岷	嵌	嶷	帶	广
7	姆	娶	嬌	孩	寐	尤	岌	峭	岳	嶼	帷	庠
8	姨	婢	嬋	孰	寤	尨	岑	崑	嶠	嶢	幄	廁
9	姜	婪	璧	孛	實	尸	岔	峪	崑	巍	幃	廂
A	妍	媚	嬋	孵	寢	尹	岌	華	崑	嶺	幃	廈
B	姘	嫗	嫩	學	寔	屮	岷	崑	差	戀	幃	廐
C	姚	媯	嬋	孛	寥	屆	岷	崑	巖	幃	廐	廐
D	娥	嫗	嫗	孀	寫	屎	岷	崑	巖	幃	廐	廐
E	媚	嫗	嫗	孀	寫	屎	岷	崑	巖	幃	廐	廐
F	娉	媽	嫗	孀	寫	屎	岷	崑	巖	幃	廐	廐

OC	A	S	G	7	8	9	A	B	C	D	E	F
0	廖	弃	彖	徕	怙	協	俊	愠	慤	惛	憫	懺
1	廣	井	彖	徕	怙	恆	悖	愕	愧	惕	憫	懺
2	廐	彖	彖	徕	怙	恆	悖	愕	愧	惕	憫	懺
3	廚	彖	彖	徕	怙	恆	悖	愕	愧	惕	憫	懺
4	廐	弋	彭	徕	怙	恆	悖	愕	愧	惕	憫	懺
5	廢	弋	彭	徕	怙	恆	悖	愕	愧	惕	憫	懺
6	廐	弓	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
7	廐	弩	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
8	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
9	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
A	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
B	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
C	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
D	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
E	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺
F	廐	弋	徕	怙	恆	恆	悖	愕	愧	惕	憫	懺

OD	A	S	G	7	8	9	A	B	C	D	E	F
0	憂	抉	拜	挾	揜	攝	擒	擲	斂	斷	杳	晰
1	戡	找	拌	捍	掾	搗	擅	擲	效	旃	昵	晁
2	截	抒	拊	搜	揩	搗	擇	擺	敖	旃	昶	量
3	戮	抓	拂	捏	揀	搏	撻	攀	敕	旁	昂	映
4	戰	抖	拇	掖	揆	推	擘	攢	敘	旌	晏	暄
5	戲	拔	拋	倚	揣	擊	搗	攢	敘	旌	晏	暄
6	戡	拊	拉	掀	揉	搏	攢	攢	敘	旌	晏	暄
7	扁	扞	格	掀	插	揆	攢	攢	敘	旌	晏	暄
8	扎	拗	拮	捶	擲	攢	攢	攢	敘	旌	晏	暄
9	扞	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
A	扣	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
B	扛	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
C	扞	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
D	扞	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
E	扞	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣
F	扞	拮	拮	掣	掣	掣	掣	掣	掣	掣	掣	掣

OF	A	S	G	7	8	9	A	B	C	D	E	F
0	曄	霸	杼	柝	梳	梵	棧	輪	棟	榷	樅	櫟
1	瞭	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
2	曖	束	粉	柝	柝	柝	棧	輪	棟	榷	樅	櫟
3	矇	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
4	曠	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
5	眈	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
6	矇	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
7	曠	朮	杪	柝	柝	柝	棧	輪	棟	榷	樅	櫟
8	曰	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
9	曳	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
A	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
B	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
C	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
D	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
E	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀
F	曠	杞	柯	桀	桀	桀	桀	桀	桀	桀	桀	桀

OF	A	S	G	7	8	9	A	B	C	D	E	F
0	榮	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
1	榮	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
2	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
3	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
4	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
5	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
6	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
7	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
8	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
9	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
A	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
B	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
C	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
D	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
E	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟
F	檻	榮	歡	殫	麾	汾	泛	涓	渚	渙	游	溟

FO	A	S	G	7	8	9	A	B	C	D	E	F
0	漾	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
1	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
2	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
3	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
4	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
5	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
6	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
7	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
8	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
9	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
A	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
B	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
C	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
D	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
E	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑
F	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑	灑

F1	4	5	6	7	8	9	A	B	C	D	E	F
0	瓠	瓿	畫	疳	痼	瘰	𧈧	皺	昵	瞎	矜	碣
1	瓣	甓	畛	疔	瘁	癰	癸	孟	眞	瞋	矣	碩
2	𣶒	甞	畸	疵	痰	癰	發	盍	眚	瞋	矮	碓
3	𣶒	甞	當	疽	痺	癰	𦣻	盍	眚	瞋	𣶒	碓
4	瓮	甬	疆	疸	痲	癰	兒	盒	昧	瞞	砌	磴
5	𣶒	𣶒	疇	疼	痲	癰	𦣻	盍	眚	瞋	𣶒	碓
6	𣶒	𣶒	疇	疱	瘋	癰	皋	盍	眚	瞋	𣶒	碓
7	𣶒	𣶒	𣶒	癰	癰	癰	咬	盍	眚	瞋	𣶒	碓
8	𣶒	𣶒	𣶒	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
9	瓷	𣶒	𣶒	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
A	甄	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
B	𣶒	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
C	𣶒	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
D	𣶒	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
E	𣶒	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓
F	𣶒	𣶒	癰	癰	癰	癰	𣶒	盍	眚	瞋	𣶒	碓

F2	4	5	6	7	8	9	A	B	C	D	E	F
0	磧	拔	拔	穰	穰	竄	竄	筭	筭	簞	料	粿
1	磚	祺	秣	穰	竄	竄	筭	筭	簞	簞	料	粿
2	磧	祿	秣	穰	竄	竄	筭	筭	簞	簞	料	粿
3	磧	楔	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
4	磧	楔	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
5	磧	禱	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
6	磧	禱	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
7	磧	禱	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
8	磧	禱	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
9	磧	禱	稍	穰	竄	竄	筭	筭	簞	簞	料	粿
A	祀	禹	稻	窘	站	站	笱	笱	笱	笱	粿	粿
B	祠	禹	稻	窘	站	站	笱	笱	笱	笱	粿	粿
C	祇	秉	稷	窩	竈	竈	笱	笱	笱	笱	粿	粿
D	崇	祇	稷	竈	竈	竈	笱	笱	笱	笱	粿	粿
E	祇	稷	稷	竈	竈	竈	笱	笱	笱	笱	粿	粿
F	祇	稷	稷	竈	竈	竈	笱	笱	笱	笱	粿	粿

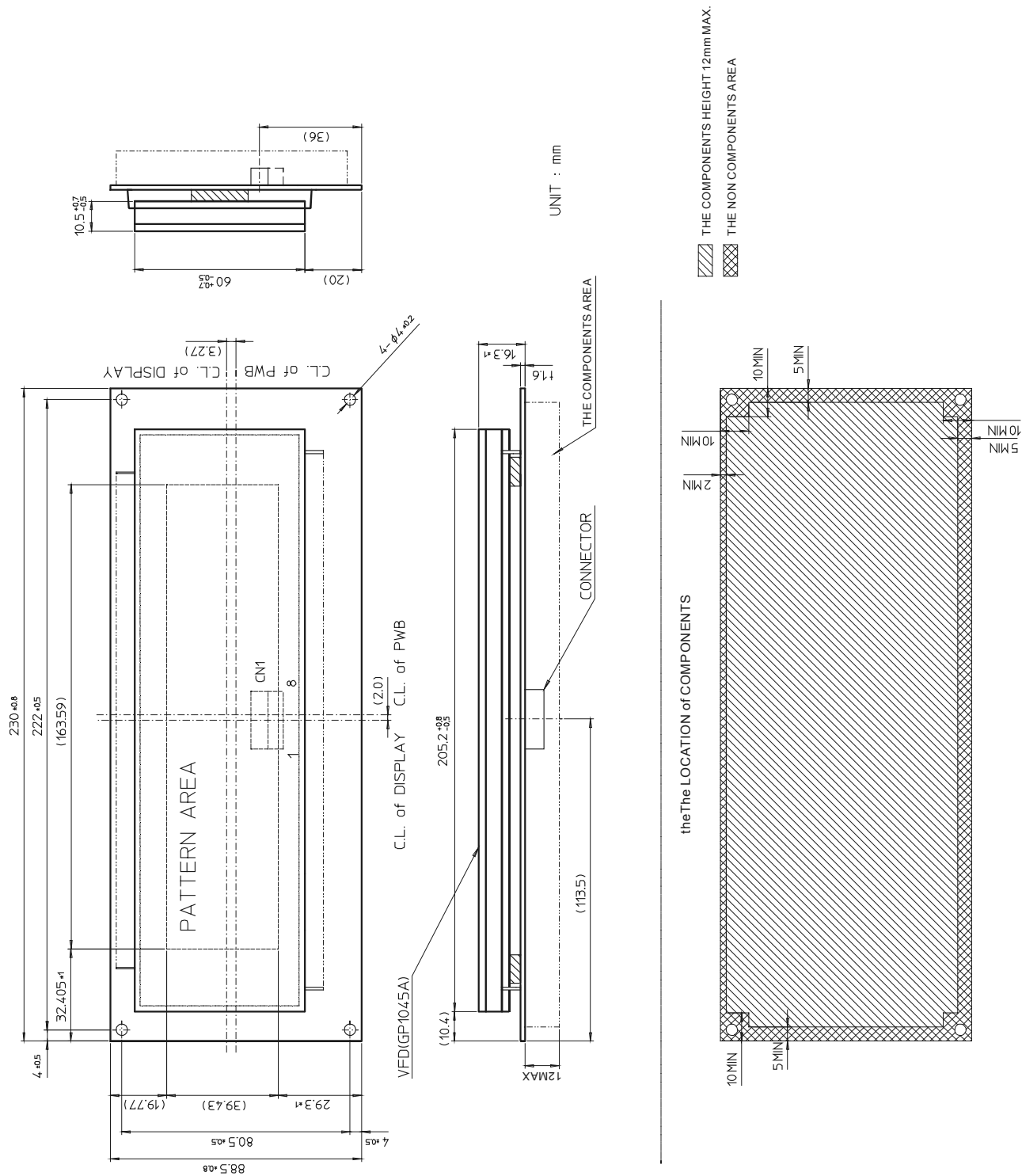
F3	4	5	6	7	8	9	A	B	C	D	E	F
0	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
1	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
2	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
3	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
4	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
5	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
6	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
7	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
8	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
9	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
A	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
B	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
C	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
D	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
E	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲
F	紂	紂	總	縣	縲	縲	縲	縲	縲	縲	縲	縲

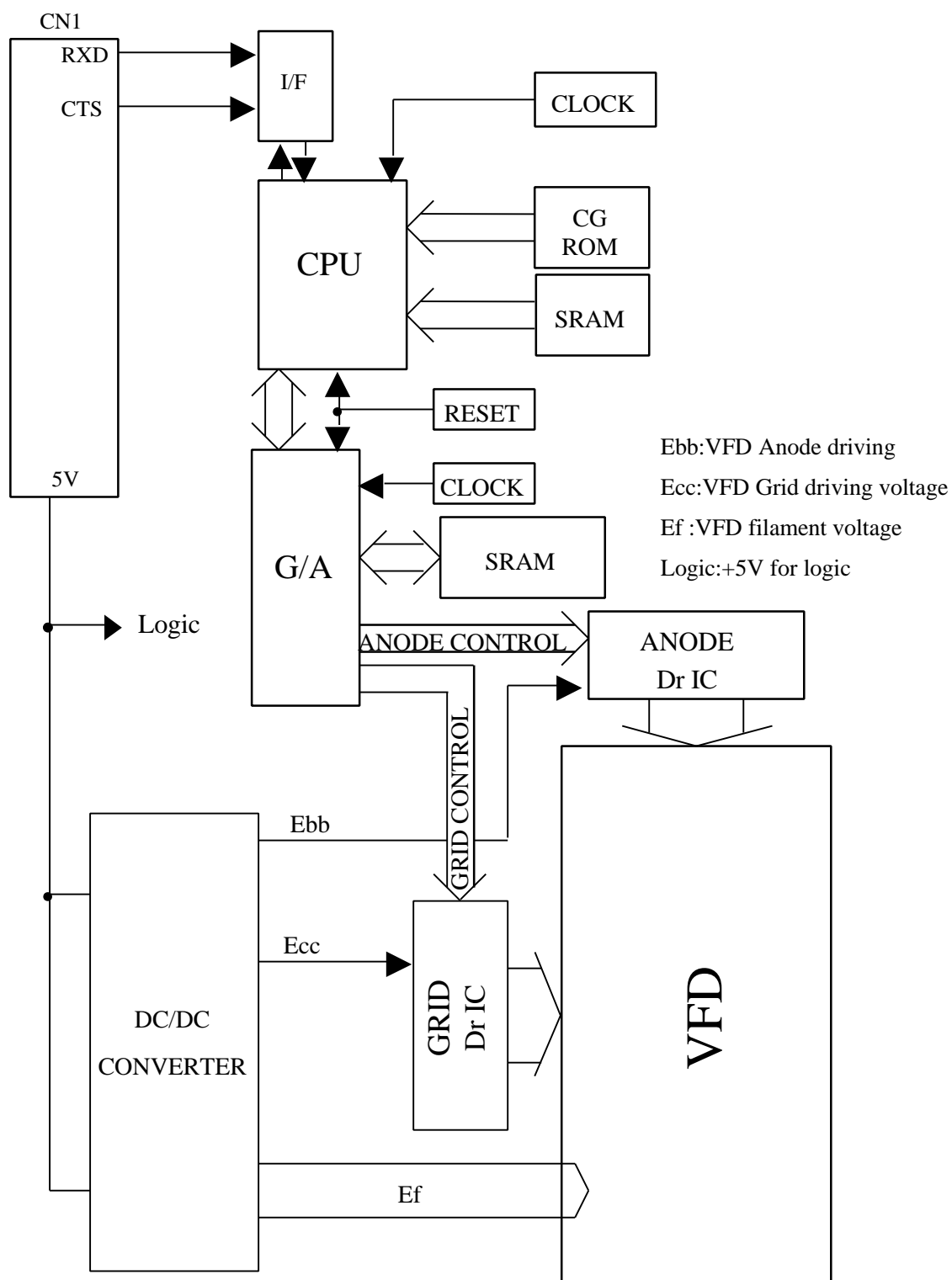
F4	4	5	6	7	8	9	A	B	C	D	E	F
0	隋	膠	臍	舊	臍	臍	苜	苜	苜	苜	苜	苜
1	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
2	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
3	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
4	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
5	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
6	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
7	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
8	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
9	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
A	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
B	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
C	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
D	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
E	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜
F	臍	臍	臍	臍	臍	臍	苜	苜	苜	苜	苜	苜

F5	4	5	6	7	8	9	A	B	C	D	E	F
0	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
1	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
2	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
3	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
4	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
5	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
6	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
7	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
8	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
9	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
A	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
B	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
C	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
D	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
E	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁
F	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁	蕁

F6	4	5	6	7	8	9	A	B	C	D	E	F
0	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
1	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
2	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
3	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
4	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
5	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
6	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
7	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
8	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
9	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
A	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
B	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
C	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
D	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
E	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬
F	襦	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬	覬

FIGURE-1





5. WARRANTY

This display module is guaranteed for 1 year after the shipment from FUTABA.

6. CAUTIONS FOR OPERATION

- 6-1. Applying lower voltage than the specified may cause non activation for selected pixels. Conversely, higher voltage may cause non-selected pixel to be activated. If such a phenomenon is observed, check the voltage level of the power supply.
- 6-2. DC/DC converter is equipped on the module, the surge current may be approximately 5 times the specified supply current at the power on.
- 6-3. Avoid using the module where excessive noise interface is expected. Noise affects the interface signal and causes improper operation. Keep the length of the interface cable less than 30cm. (When the longer cable is required, please confirm there is no noise affection.)
- 6-4. When power is turned off, the capacitor will not discharge immediately. Avoid touching IC and others. The shorting of the mounted components within 30 sec., after power off, may cause damage.
- 6-5. When fixed pattern is displayed for a long time, you may see uneven luminance. It is recommended to change the display patterns sometimes in order to keep best display quality.

REMARKS :

The specification is subject to change without prior notice.

Your consultation with FUTABA sales office is recommended for the use of this module.