

# VD1220

## User Manual

Version: 1.0



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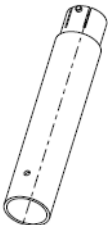
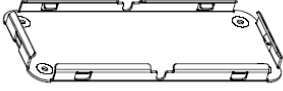
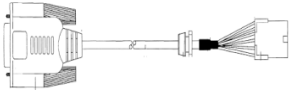
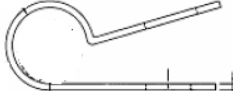
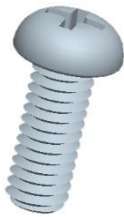
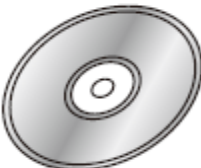

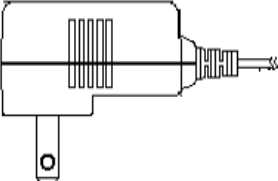
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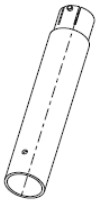
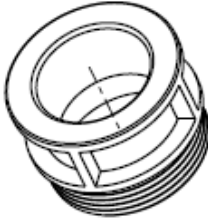
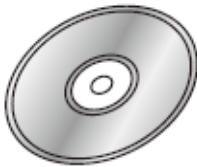
# 1

## Packing List

### 1.1 Packing List (VD1220 Stand Alone type)

<p>A. VFD Panel</p> 	<p>B. Tube x 2</p> 	<p>C. Metal for Base</p> 
<p>D. RS232 Cable</p> 	<p>E. Cable Mount</p> 	<p>F Screw to fix x 4</p> 
<p>G Driver Bank</p> 	<p>H. Screw for Cable Mountx1</p> 	<p>A. 5W Adapter (Optional)</p> 

### 1.2 Packing List (VD1220 for PT6000/6300)

<p>A. VFD Panel</p> 	<p>B. Tube x 2</p> 	<p>C. Foot Ring x 1</p> 
<p>D. Driver Bank</p> 		

## 2

## Specification

### Specification

Model	VD1220
Display Method	Vacuum Fluorescent Display
Number of characters	40 (20 columns x 2 Lines)
Brightness	700 cd/m <sup>2</sup>
Character Font	5 x 7 Dot Matrix
Character Type	95 Alphanumeric, 32 International Characters
Character Size	6.7(H) x 3.7(W) mm
Dot size	0.5(H) x 0.7(W) mm
Height	118mm with stand-alone base 418mm with base and 2 extension
Panel Dimension	72mm(H) x 184mm(W) x 40mm(D)
Pole Dimension	Per support length : 150mm(by 2)
Base Dimension	36.5mm(H) x 200 mm(W) x 95mm(D)
Tilt Angle	Max 45°
Swivel Angle	Max 336°
Weight	Approx. 1000grams
Commands Mode	VD1220, EPSON, AEDEX, UTC/S, UTC/E, ADM788, DSP800, CD5220, EMAX, LOGIC CONTROL
Language Support	USA, French, Germany, U.K, Danish, Swedish, Italian, Spanish, Katakana, Norwegian, Slavonic, Russian, Portuguese, Arabic, Greek, Nordic, Croatia, Bosnia, Hungarian, Romanian, Czech, Bulgaria, Finnish, Turkish, Hebrew, Polish
Color	Black/White
Interface	RS232
Connection (Baud Rate)	Direct connection 9600 or 19200 bps
Reliability (MTBF)	30,000 hours
Power Supply	5V
Certification	CE, FCC

# 3

## Installing Model VD1220

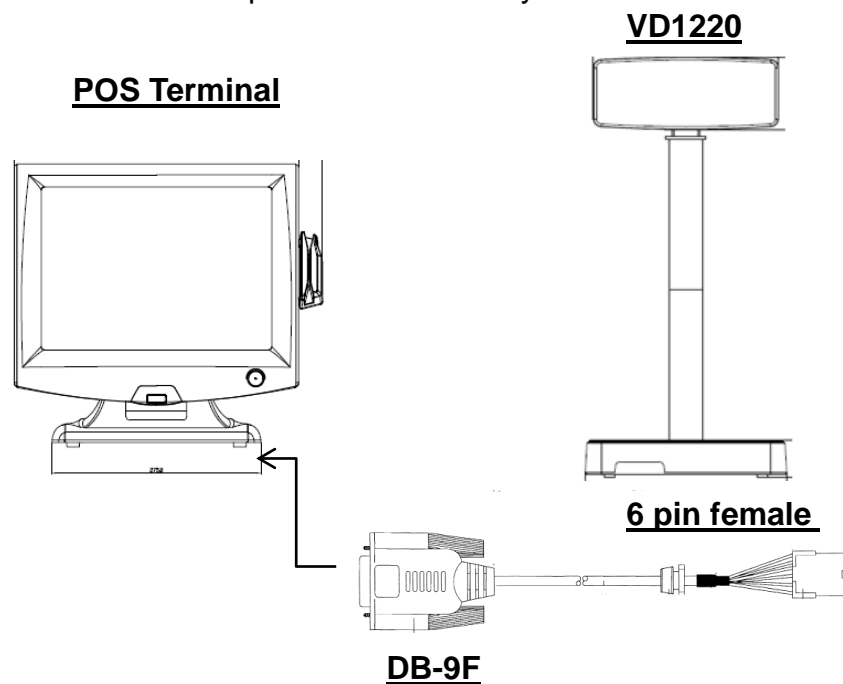
### 3.1 VD1220 for Stand-alone type

#### Step 1: Turn off your computer

Please turn off your computer to avoid any accidental damage to the pole display and computer.

#### Step 2: Build up your VD1220

Please refer to the chapter 4 to assemble your VFD.



#### Step 3: Decide on power access

**VD1220 only support power +5V DC, please make sure the power voltage is 5V before plugging in.** Regarding 5V power, this may be provided through an internal connection in your computer or through an external connection to a 5W adapter. Additionally, **please refer to the user manual of your POS terminal for power selection, because different POS terminal has different approach for power selection.**

## 3

# Installing Model VD1220

### **Step 4: Connect to your computer**

Connect the RS232 connector to the male equivalent com port on your computer or terminal. Provide power to the DB9F connector using either a cable connection or an external adapter.

### **Step 5: Turn on your computer**

Turn on your computer, it should boot up normally. The pole display will show a self-diagnostic status and then will show a welcome message.

### **Step 6: Turn to following chapter to know more information.**

Please refer to chapter 7 for function setting, chapter 8 for system command detail, chapter 9 for operation guide of utility and chapter 10 for character set.

# 3

## Installing Model VD1220

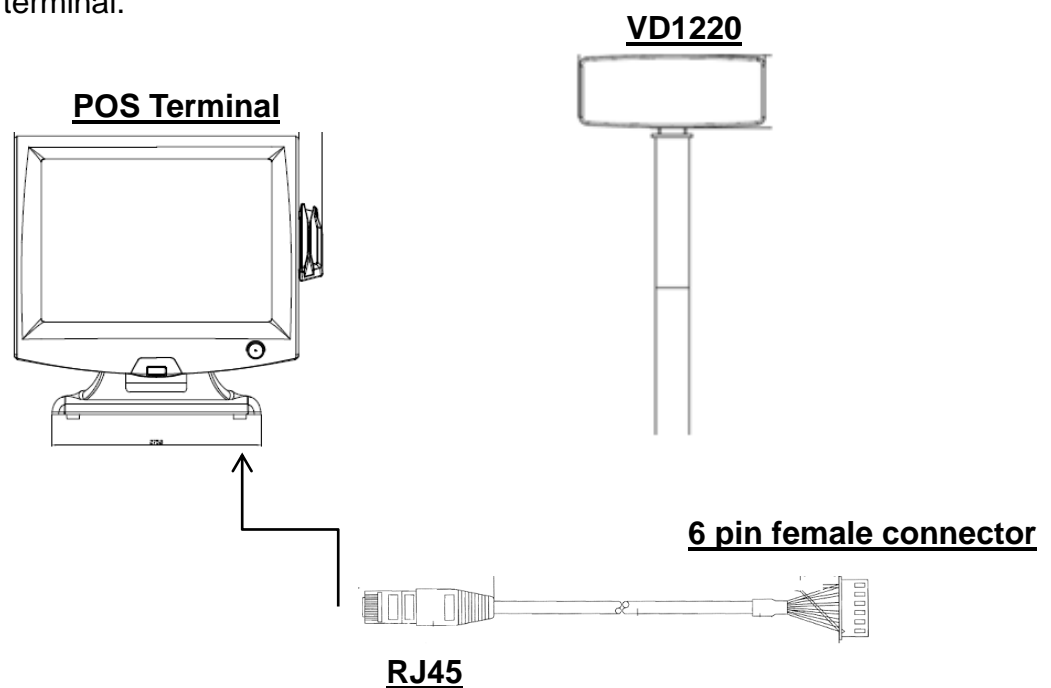
### 3.2 VD1220 for PT6000/6300

#### Step 1: Turn off your computer

Please turn off your computer to avoid any accidental damage to the pole display and computer.

#### Step 2: Build up your VD1220

Please refer to the chapter 4 to assemble and integrate your VFD with POS terminal.



#### Step 4: Connect to your computer

Connect the RJ45 connector to the female equivalent RJ45 port on your computer or terminal.

#### Step 5: Turn on your computer

Turn on your computer, it should boot up normally. The pole display will show a self-diagnostic status and then will show a welcome message.

#### Step 6: Turn to following chapter to know more information.

Please refer to chapter 7 for function setting, chapter 8 for system command detail, chapter 9 for operation guide of utility and chapter 10 for character set.



## 4

## Assembly

### 4.1 VD1220 Stand-alone type

**4.1.1** Take VFD panel and two VFD poles out from the package box and Install two tubes into one pole and reeve the cable from the VFD panel through the socket of stand..



VFD Panel



VFD Pole



**4.1.2** Install the pole into the hole of the stand and put the cable through the stand.



## 4

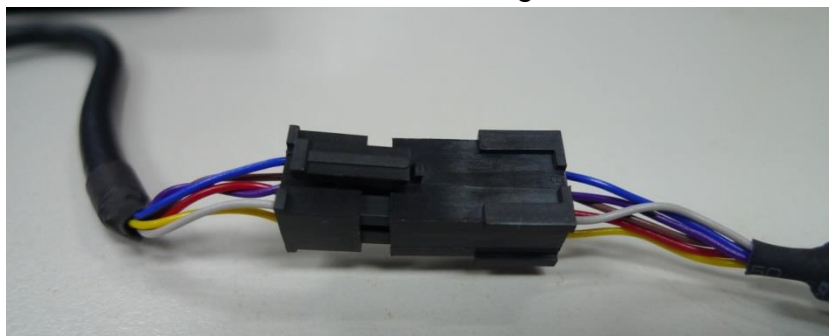
## Assembly



**4.1.3** Fix the cable mount with one screw in plastic bag.



**4.1.4** Connect RS232 cable as shown in the figure below.



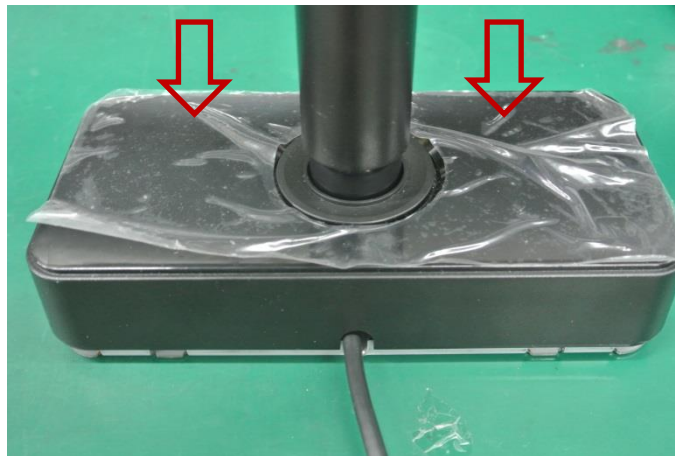
## 4

## Assembly

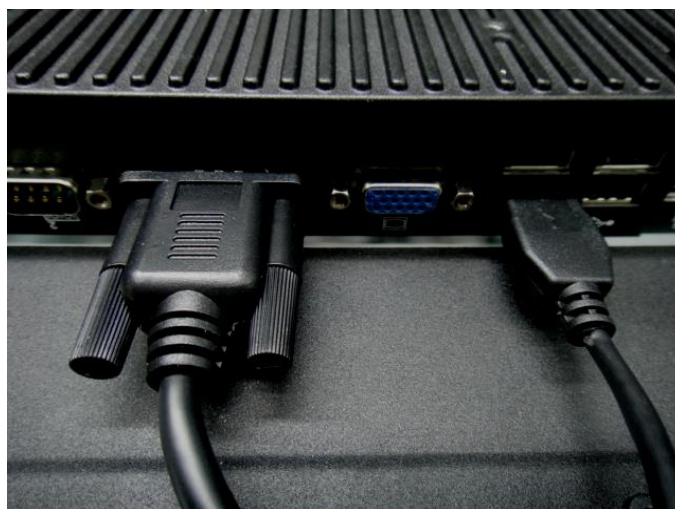
**4.1.5** Put the RS232 cable onto the place as shown in the picture below, and then combine stand and metal plate.



**4.1.6** Combine stand and metal plate in the way as shown in the figure.



**4.1.7** Connect the RS232 cable with your POS terminal. .



# 4

## Assembly

### 4-2 Optional Adapter

Please plug the DC plug into the hole as red mark shown in the figure



## 4

## Assembly

### 4.3 VD1220 for PT6000/6300

**4.3.1** Take VFD panel and two VFD poles out from the package box and Install two tubes into one pole and reeve the cable from the VFD panel through the socket of stand.



VFD Panel



VFD Pole



**4.3.2** For the foot ring assembly, please install the foot ring into the socket in clockwise direction.



## 4

## Assembly

**4.3.3** Then install the pole into the foot ring.

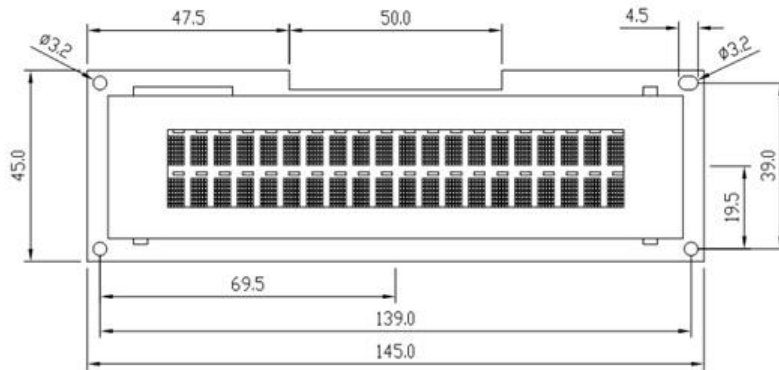


**4.3.4** Then connect RJ45 cable to POS terminal's RJ45 port

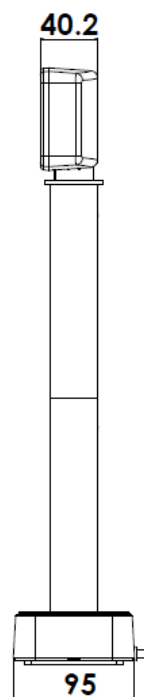
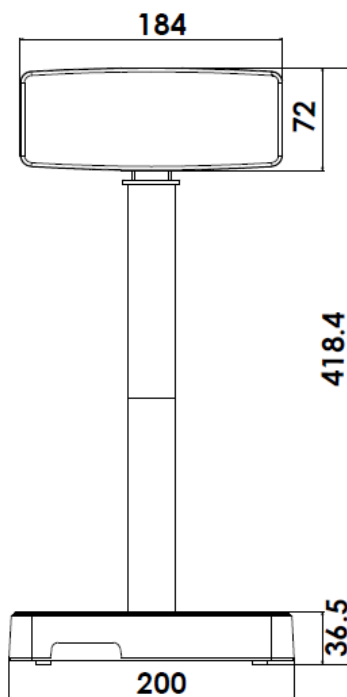
## 5

## Dimension

### 5.1 VFD Module Dimension



### 5.2 VD1220 Dimension

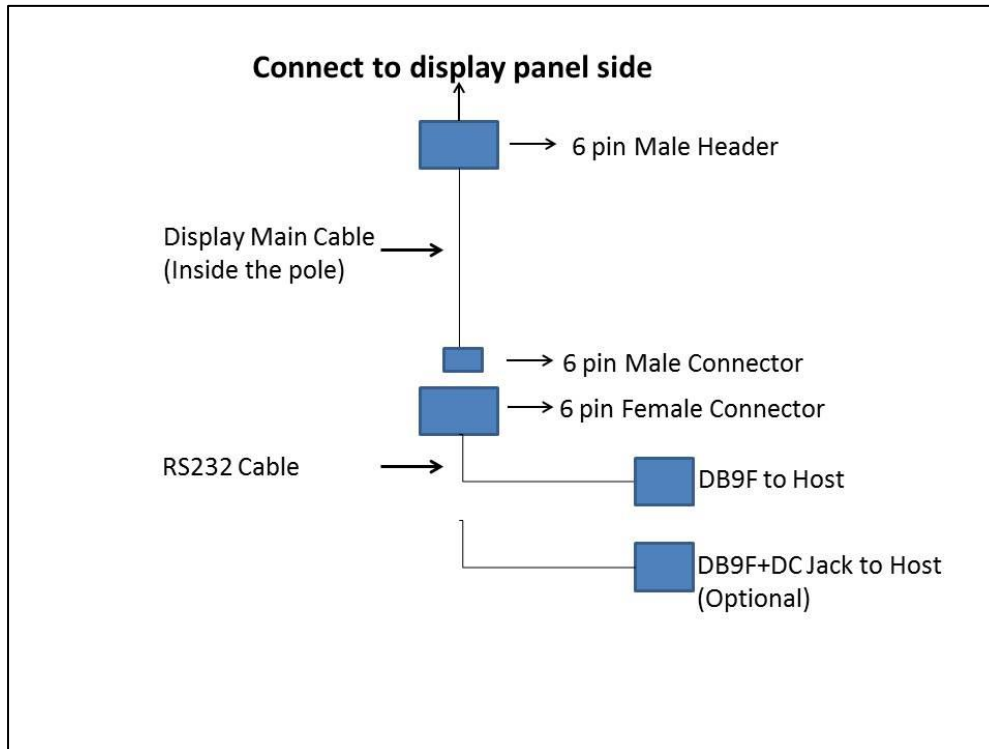


Unit: mm

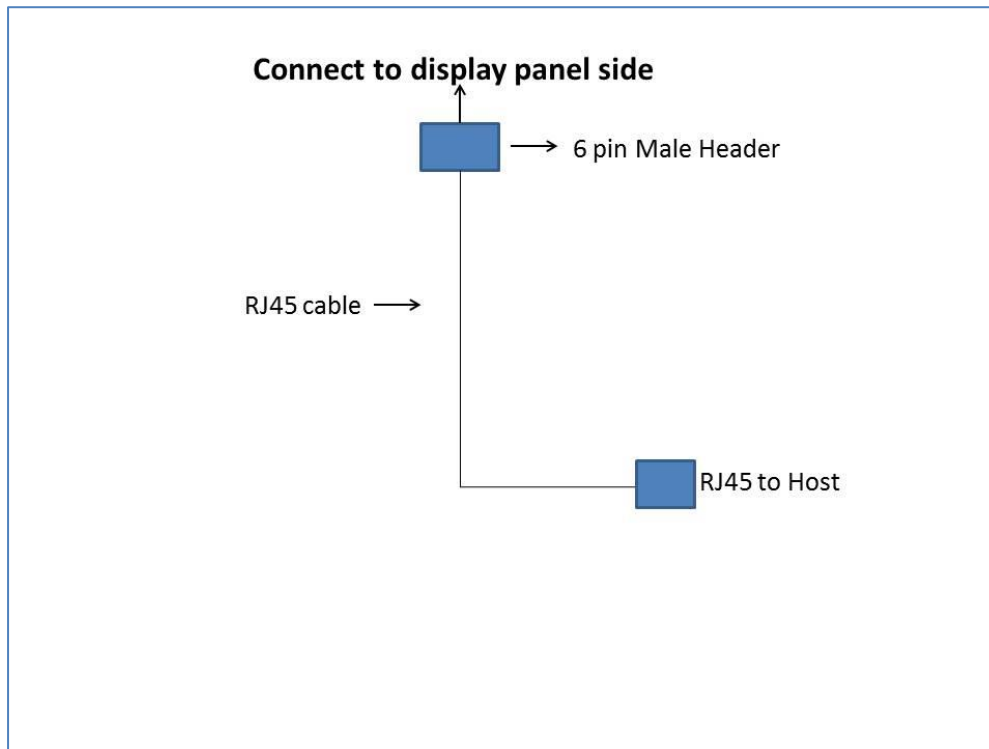
# 6

## Pin Definition

### Cable Connection Diagram for VD1220 stand-alone type



### Cable Connection Diagram (VD1220 for PT6000 series)





# 6

## Pin Definition

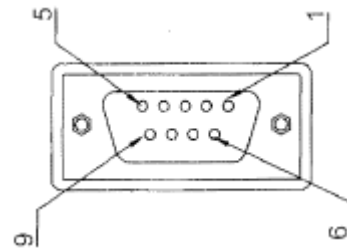
### 6.1 6 Pin male Header to display panel side

Pin NO.	Description
1	GND
2	TXD
3	RXD
4	CTS
5	RTS
6	+5VDC



### 6.2 DB9F to Host

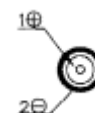
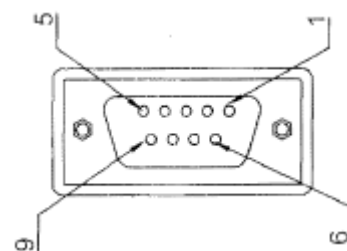
Pin NO.	Description
1	NC
2	TXD
3	RXD
4	NC
5	GND
6	NC
7	CTS
8	RTS
9	+5VDC



### 6.3 DB9F + DC Jack to Host

Pin NO.(DB9F)	Description
1	NC
2	TXD
3	RXD
4	NC
5	NC
6	NC
7	CTS
8	RTS
9	NC

Pin NO (DC Jack).	Description
1	+5VDC
2	GND

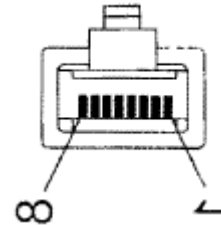


# 6

## Pin Definition

### 6.4. RJ45 to Host

Pin NO.	Description
1	+5VDC
2	NC
3	GND
4	NC
5	CTS
6	RTS
7	RXD
8	TXD



## 7

## Function Setting

**7.1 Baud Rate Select**

Function Description Baud Rate (bps)

9600

19200

**7.2 Command Type Select**

Function Description	Software Defined
Command Type	Hex Code
Clientron	00
EPSON POS	01
UTC Standard	02
UTC Enhance	03
AEDEX	04
ADM788	05
DSP800	06
CD5220	07
EMAX	08
LOGIC CONTEOL	09

**7.3 International Character Set**

	Language	International Fonts (Code 20H-7FH)	Extended Character (Code 80H-FFH)
1	USA	U.S.A	CP437
2	French	France	CP858
3	Germany	GERMANY	CP858, CP1252
4	U.K.	U.K	CP858
5	Danish	DENMARKI DENMARKII	CP858

## 7

## Function Setting

6	Swedish	SWEDEN	CP858, CP1252
7	Italian	ITALY	CP858, CP1252
8	Spanish	SPAIN	CP858, CP1252
9	Japan	JAPAN	KATAKANA FOR JAPAN
10	Norwegian	NORWAY	CP858, CP1252
11	Slavonic	SLAVONIC	CP852
12	Russian	RUSSIA	CP866, CP1251
13	Portuguese	U.S.A	CP860
14	Arabic	U.S.A	CP864
15	Greek	U.S.A	CP1253
16	Nordic	U.S.A	CP865
17	Croatia	U.S.A	CP852
18	Bosnia	U.S.A	CP852
19	Hungarian	U.S.A	CP852
20	Romanian	U.S.A	CP852
21	Czech	U.S.A	CP1252
22	Bulgaria	U.S.A	CP1252
23	Finnish	U.S.A	CP1252
24	Turkish	U.S.A	CP862, CP1254
25	Hebrew	U.S.A	CP1255, CP862
26	Polish	U.S.A	PC852

## 8

## System Command Detail

## 8.1 VD1220 Command Set

Command	Hex	Function
HT	09	Move cursor right (Only valid in overwrite mode)
BS	08	Move cursor left (Only valid in overwrite mode)
CR	0D	Move cursor to left-most position (Only valid in overwrite mode)
ESC @	1B 40	Initialize customer display to initial state, clears display buffer, set display mode to shift and sets current display row to upper row
ESC U	1B 55	Select upper row as current row (Initial default)
ESC D	1B 44	Select lower row as current row
ESC A n	1B 41 n	Sets customer display disable or enable n=D, Disable ; n=E, Enable
ESC C r c	1B 43 r c	Move cursor to specified position (Only valid in overwrite mode) r=U, upper row ; r=D, lower row $1 \leq c \leq 20$ (column number)
ESC E r n	1B 45 r n	Set special effect or display mode of specified row
ESC R n	1B 52 n	Set international font sets ( Please refer International Font Set Table)
ESC % n	1B 25 n	Set font pattern n=0, selected ; n=1, canceled
ESC & n s [p]	1B 26 n s data	Define user font pattern n=code for first character s=code for last character data=5 bytes required for each character

## 8

## System Command Detail

**(REMARK)\*Using commands “ESC E r n”, the value (Hex) of parameter**

r	58h=all rows	n	special function, the value is one of
	55h=upper row		30h=shift mode (Default display mode)
	44h=lower row		31h=rotation mode
			32h=blink mode
			33h=clear this row and switch to shift mode
			34h=overwrite mode
			35h=vertical mode

**\* International Font Set Table**

n (Hex)	International Font Set	n (Hex)	International Font Set
30h	U.S.A	32h	FRANCE
31h	GERMANY	33h	JAPAN

## 8.2 EPSON ESC/POS Command Set

Command	Hex	Function Description
HT	09	Move cursor right
BS	08	Move cursor left
US LF	1F 0A	Move cursor up
LF	0A	Move cursor down
US CR	1F 0D	Move cursor to right-most position
CR	0D	Move cursor to left-most position
HOM	0B	Move cursor to home position
US B	1F 42	Move cursor to bottom position
US \$ x y	1F 24 x y	Move cursor to specified position $1 \leq x(\text{column}) \leq 20 ; 1 \leq y(\text{row}) \leq 2$
US C n	1F 43 n	Select/cancel cursor display n=0, canceled ; n=1, selected
CLR	0C	Clear display screen
CAN	18	Clear cursor line
US X n	1F 58 n	Brightness adjustment $1 \leq n \leq 4$
US E n	1F 45 n	Blink display screen $0 \leq n \leq 255$ (n*50msec) ON / (n*50msec) OFF
ESC @	1B 40	Initialize display
ESC t n	1B 74 n	Select character code table

# 8

## System Command Detail

		$0 \leq n \leq 5$ ( Please refer "Chapter 5" )
ESC R n	1B 52 n	Select international character set ( Please refer International Font Set Table )
US r n	1F 72 n	Select/cancel reverse character n=0, canceled ; n=1, selected
US MD1	1F 01	Specify overwrite mode
US MD2	1F 02	Specify vertical scroll mode
US MD3	1F 03	Specify horizontal scroll mode
US . n	1F 2E n	Specify period display n= display character code
US , n	1F 2C n	Specify comma display n= display character code
US ; n	1F 3B n	Specify semicolon (period+comma) display n= display character code
US # n m	1F 23 n m	Specify display annunciator,, turn the annunciator at "m" column on or off n=0,1 (Off, On) ; $0 \leq m \leq 20$
ESC & s n m [a(pl..p5)] (m-n+1)	1B 26 s n m [a(pl..p5)](m-n+1)	Define download characters s=1 ; $32 \leq n \leq m \leq 126$ ; a=5 ( p1..p5 = pattern1..pattern5 )
ESC ? n	1B 3F n	Cancel user-defined characters $32 \leq n \leq 126$ (n=character code)
ESC % n	1B 25 n	Select/cancel download character set n=0, canceled ; n=1, selected
ESC W n s (x1 y1 x2 y2)	1B 57 n s (x1 y1 x2 y2)	Specify/cancel the window range n=1,2,3,4 (four windows) ; s=0,1 (disable, enable) $1 \leq x1 \leq x \leq 220$ (column) ; $1 \leq y1 \leq y2 \leq 2$
ESC = n	1B 3D n	Select peripheral device n=1, printer ; n=2, display ; n=3, printer & display
US :	1F 3A	Set starting/ending position of macro definition
US ^ n m	1F 5E n m	Execute and quit macro $0 \leq (n,m) \leq 255$ n: specifies the time interval for display of characters in units of [n* 50msec] m: specifies the interval of macro execution

# 8

## System Command Detail

		every [m*50msec]
US @	1F 40	Execute self-test
US T h m	1F 54 h m	Display time : $0 \leq h \leq 23$ ; $0 \leq m \leq 59$
US U	1F 55	Display of time counter

### \* International Font Set Table

Decimal n	Hex n	Country
0	00H	U.S.A
1	01H	FRANCE
2	02H	GERMANY
3	03H	U.K.
4	04H	DENMARKI
5	05H	SWEDEN
6	06H	ITALY
7	07H	SPAIN
8	08H	JAPAN.
9	09H	NORMAY
10	0AH	DENMARKII
11	0BH	SLAVONIC
12	0CH	RUSSIA

### ※Specify decimal point, comma, semicolon, annunciator\*

(1) US . n (Decimal Point) / US , n (Comma) / US ; n (Semicolon):

The displayed character codes are from 32(20h) to 127(7Eh), and 128(80h) to 255(FFh) in the character code table. The

period/comma/semicolon displayed only for n. The period is not displayed for the subsequent display characters.

(2) US # n m (annunciator):

[ range ] n = 0(00h) or 1(01h) / m = 0(00h)~20(14h)

[ notes ] When n= 0, the annunciator at column m is turned off.

When n= 1, the annunciator at column m is turned on.

"m" specify column number (the most left column is column 1) at which annunciator to be turned on/off is placed.

When m = 0, all annunciators are turned on or off.

Once an annunciator(s) is turned on, it remains on until turned off by this



# 8

## System Command Detail

command, the ESC@ or US@ command is executed, or the power is turned off. [example]: To turn on the annunciator at the third column:

[n = 01h ], [ m = 03h ]

To turn off all the annunciators:

[n = 00h ], [ m = 00h ]

※Above commands relating decimal point, comma, semicolon, and annunciator may not be available due to hardware limit of display tube.

### 8.3 UTC Standard Command Mode

Command	Hex	Function Description
BS	08	Back space
HT	09	Horizontal tab
LF	0A	Line feed
CR	0D	Carriage return
DC0 p	10 p	Move cursor to specified position, $0 \leq p \leq 39$ (Please refer Row Character Position Chart )
DC1	11	Over write display mode
DC2	12	Vertical scroll mode
DC3	13	Cursor on
DC4	14	Cursor off
ESC d	1B 64	Change to UTC enhanced mode
US	1F	Clear display

#### Row Character Position Chart (Decimal)

Row1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Row2	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39

#### Row Character Position Chart (Hex)

Row1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	10	11	12	13
Row2	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27

# 8

## System Command Detail

### 8.4 UTC Enhance Command Mode

Command	Hex	Function Description
ESC u A..CR	1B 75 41 [data x 20] 0D	Upper line display
ESC u B..CR	1B 75 42 [data x 20] 0D	Bottom line display
ESC u D..CR	1B 75 44 [data x 45] 0D	Upper line message scroll continuously
ESC u E..CR	1B 75 45 hh ':' mm 0D	Set and display 24 hour time $0 \leq h, m \leq 9$
ESC u F..CR	1B 75 46 [data x45] 0D	Upper line message scroll once pass
ESC u H..CR	1B 75 48 n m 0D	Change attention code $32 \leq n, m$ ( Default attention code $n=1Bh, m=75h$ )
ESC u 1..CR	1B 75 49 [data x 40] 0D	Two line display
ESC RS..CR	1B 0F 0D	Change to UTC standard mode

### 8.5 AEDEX Command Mode

Command	Hex	Function Description
! # 1..CR	21 23 31 [data x 20] 0D	Upper line display
! # 2..CR	21 23 32 [data x 20] 0D	Bottom line display
! # 4..CR	21 23 34 [data x 45] 0D	Upper line message scroll continuously
! # 5..CR	21 23 35 hh ':' mm 0D	Set and display 24 hour time $0 \leq h, m \leq 9$
! # 5 CR	21 23 35 0D	Display 24 hour time
! # 6..CR	21 23 36 [data x45] 0D	Upper line message scroll once pass
! # 8..CR	21 23 38 n m 0D	Change attention code $32 \leq n, m$ ( Default attention code $n=1Bh, m=75h$ )
! # 9..CR	21 23 39 [data x 40] 0D	Two line display

## 8

## System Command Detail

## 8.6 ADM788 Command Mode

Command	Hex	Function Description
CLR	0C	Clear display
CR	0D	Carriage return
SLE1	0E	Clear up line and move cursor to upper line left most end
SLE2	0F	Clear low line and move cursor to lower line left most end
DC0	10 n	Set period to upper line last n position $1 \leq n \leq 7$
DC1	11 n	Set line blinking n=1, upper line n=2, lower line
DC2	12 n	Clear line blinking n=1, upper line n=2, lower line
SF1	1E	Clear field 1 and move cursor to field 1 fast position
SF2	1F	Clear field 2 and move cursor to field 2 fast position

## 8.7 DSP800 Command Mode

Command	Hex	Function Description
EOT SOH I n ETB	04 01 49 n 17	Select international character set ( Please refer International Font Set Table )
EOT SOH P n ETB	04 01 50 n 17	Move cursor to specified position $49 \leq n \leq 88$
EOT SOH C n m ETB	04 01 43 n m 17	Clear display range from n position to m position and move cursor to n position $49 \leq n \leq m \leq 88$
EOT SOH S n ETB	04 01 53 n 17	Save the current displaying data (40 characters) to n'th layer for demo display $1 \leq n \leq 3$ ( n specify the layer 1, 2, or 3 )
EOT SOH D n m ETB	04 01 44 n 17	Display the saved data $1 \leq n \leq 3$ ( n specify the layer 1, 2, or 3 ) "m" can be ignored
EOT SOH A n ETB	04 01 41 n m 17	Brightness adjustment 1n4

# 8

## System Command Detail

EOT SOH = n ETB	04 01 3D n 17	Select peripheral device n=1, printer ; n=2, display
EOT SOH % ETB	04 01 25 17	Initialize display

### \* International Font Set Table

ASCII n	Decimal n	Hex n	Country
0	48	30H	U.S.A
1	49	31H	FRANCE
2	50	32H	GERMANY
3	51	33H	U.K
4	52	34H	DENMARKI
5	53	35H	SWEDEN
6	54	36H	ITALY
7	55	37H	SPAIN
8	56	38H	JAPAN
9	57	39H	NORWAY
A	58	3AH	DENMARKII
B	59	3BH	SLAVONIC
C	60	3CH	RUSSIA

## 8.8 CD5220 Command Mode

Command	Hex	Function Description
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical scroll mode
ESC DC3	1B 13	Horizontal scroll mode
ESC Q A CR	1B 51 41 [N]20 0D	Set string display mode, write string to upper line
ESC Q B CR	1B 51 42 [N]20 0D	Set string display mode, write string to lower line
ESC Q D CR	1B 51 44 [N]20 0D	Upper line message scroll continuously m<40
ESC [ D	1B 5B 44	Move cursor left
BS	08	Move cursor left
ESC [ C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [ A	1B 5B 41	Move cursor up
ESC [ B	1B 5B 42	Move cursor down

# 8

## System Command Detail

LF	0A	Move cursor down
ESC [ H	1B 5B 48	Move cursor to home position
HOM	0B	Move cursor to home position
ESC [ L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [ R	1B 5B 52	Move cursor to right-most position
ESC [ K	1B 5B 4B	Move cursor to bottom position
ESC [ x y	1B 6C x y	Move cursor to specified position 1x20 (column) ; y ≤ ≤ =1,2 (row)
ESC @	1B 40	Initialize display
ESC W s x1 x2 y	1B 57 s x1 x2 y	Enable or disable the window range at horizontal scroll mode s=0,1 (disable, enable) 1 ≤ x1 ≤ x2 ≤ 20 (column) ; y=1,2 (row)
CLR	0C	Clear display screen, and clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC * n	1B 2A n	Brightness adjustment 1 ≤ n ≤ 4
ESC & s n m [a(pl..p5)] (m-n+1)	1B 26 s n m [a(pl..p5)] (m-n+1)	Define download characters s=1 ; 32 ≤ n ≤ m ≤ 126 ; a=5 ( p1..p5 = pattern1..pattern5 )
ESC ? n	1B 3F n	Delete download characters 32 ≤ n ≤ 126 (n=character code)
ESC % n	1B 25 n	Select / cancel download character set. n=0, canceled ; n=1, selected
ESC _ n	1B 5F n	Set cursor ON/OFF n=0,1 (Off,On)
ESC f n	1B 66 n	Select international fonts set
ESC c n	1B 63 n	Select fonts, ASCII code or JIS code
ESC = n	1B 3D n	Select peripheral device n=1, printer ; n=2, display ; n=3, printer & display

### (REMARK)

- \* While using command “ESC Q A” or “ESC Q B”, these two commands could be used combining with terminal printer - TP 2688 or TP3688
- \* If using command “ESC Q A” or “ESC Q B”, others commands can’t be used except using command “CLR” or “CAN” to change operating mode.
- \* If using command “ESC Q D”, message on upper line will move continuously

## 8

## System Command Detail

till receiving a new command, clearing upper line, and moving cursor to most left position on upper line.

## International Font Set Table

ASCII n	Decimal n	Hex n	Country
A	65	41H	U.S.A
D	68	44H	DENMARKI
E	69	45H	DENMARKII
F	70	46H	FRANCE
G	71	47H	GERMANY
I	73	49H	ITALY
J	74	4AH	JAPAN.
L	76	4CH	SLAVONIC
N	78	4EH	NORMAY
R	82	52H	RUSSIA
S	83	53H	SPAIN
U	85	55H	U.K.
W	87	57H	SWEDEN

## \* Select Code Table

ASCII n	Decimal n	Hex n	character code table(80H...FFH)
A	64	41H	U.S.A. and Standard Europe
J	74	4AH	Katakana for Japan
L	76	4CH	SLAVONIC
R	82	52H	RUSSIA

## 8.9 EMAX Command Mode

Command	Hex	Function Description
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical scroll mode
ESC DC3	1B 13	Horizontal scroll mode
ESC [ D	1B 5B 44	Move cursor left

## 8

## System Command Detail

BS	08	Move cursor left
ESC [ C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [ A	1B 5B 41	Move cursor up
ESC [ B	1B 5B 42	Move cursor down
LF	0A	Move cursor down
ESC [ H	1B 5B 48	Move cursor to home position
HOM	0B	Move cursor to home position
ESC [ L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [ R	1B 5B 52	Move cursor to right-most position
ESC [ K	1B 5B 4B	Move cursor to bottom position
ESC [ x y	1B 6C x y	Move cursor to specified position 1x20 (column) ; y ≤ ≤ =1,2 (row)
ESC @	1B 40	Initialize display
CLR	0C	Clear display screen, and clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC * n	1B 2A n	Brightness adjustment $1 \leq n \leq 4$
ESC _ n	1B 5F n	Set cursor ON/OFF n=0,1 (Off,On)
ESC f n	1B 66 n	Select international fonts set
ESC c n	1B 63 n	Select fonts, ASCII code or JIS code
ESC = n	1B 3D n	Select peripheral device n=1, printer ; n=2, display ; n=3, printer & display

## International Font Set Table

ASCII n	Decimal n	Hex n	Country
A	65	41H	U.S.A
D	68	44H	DENMARKI
E	69	45H	DENMARKII
F	70	46H	FRANCE
G	71	47H	GERMANY
I	73	49H	ITALY
J	74	4AH	JAPAN.

## 8

## System Command Detail

L	76	4CH	SLAVONIC
N	78	4EH	NORMAY
R	82	52H	RUSSIA
S	83	53H	SPAIN
U	85	55H	U.K.
W	87	57H	SWEDEN

## \* Select Code Table

ASCII n	Decimal n	Hex n	character code table(80H...FFH)
A	64	41H	U.S.A. and Standard Europe
J	74	4AH	Katakana for Japan
L	76	4CH	SLAVONIC
R	82	52H	RUSSIA

## 8.10 EMAX Command Mode

Command	Hex	Function Description
^Q	11	Over write display mode
^R	12	Vertical scroll mode
^I	09	Horizontal tab
^H	08	Back space
^J	0A	Line feed
^M	0D	Carriage return
^S	13	Cursor on
^T	14	Cursor off
^P	10 P	Move cursor to specified position, $0 \leq p \leq 39$ (Please refer Row Character Position Chart )
^_	1F	Clear display
^D n	0C n	Brightness mode 04 FF – 100% Brightness mode 04 60 – 60% Brightness mode 04 40 – 40% Brightness mode 04 20 – 20% Brightness mode

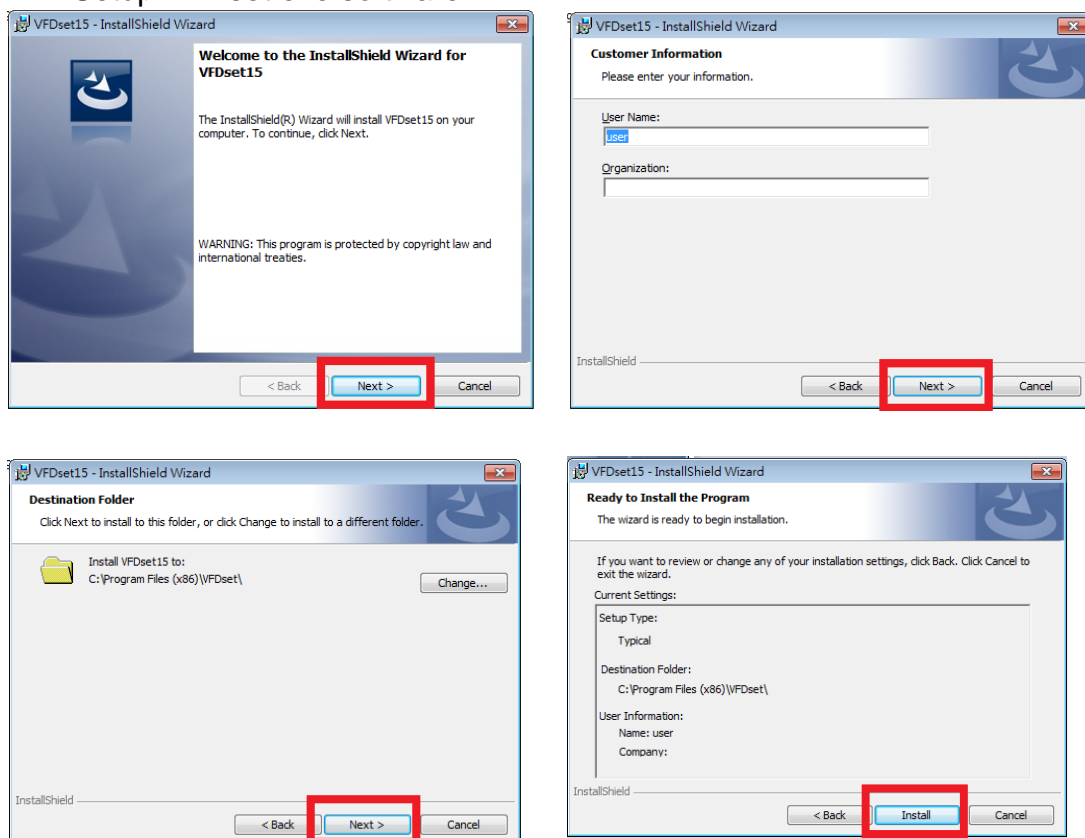


# 9

## VFDset Setup Software Utility Guide

1. Power on VFD and waiting test page of EEPROM test, Baud rate and Command page. Set up the customer display by " VFDset.exe"

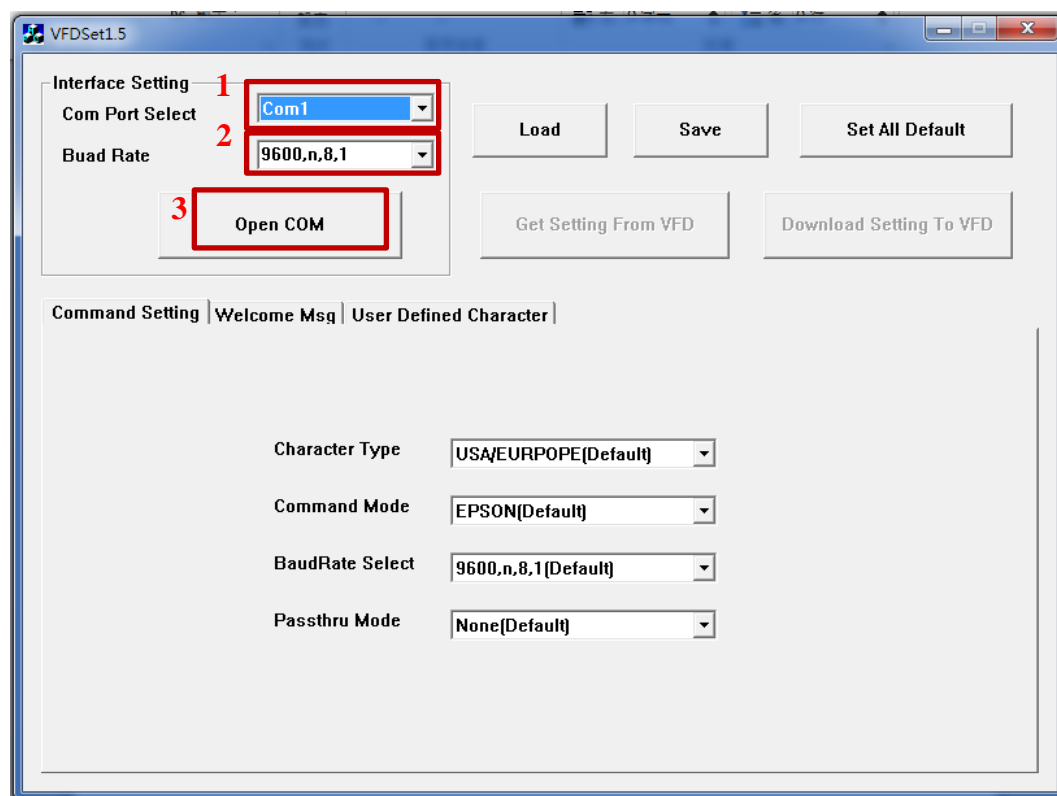
2. Setup VFDset.exe software.



# 9

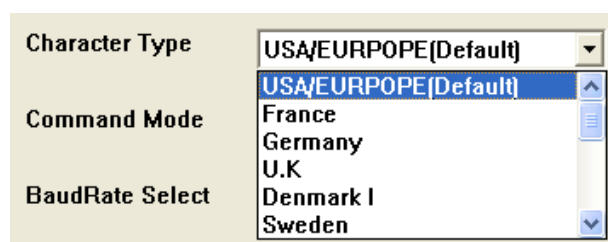
## VFDset Setup Software Utility Guide

3. To execute “VFDset.exe” for setting up communication between software and VFD module.



Please then follow the steps as shown in the above figure, the baud rate will show on states page of VFD module (Note: You may check it when power on VFD module), then click “Open COM” button.

4. “Get Setting from VFD” button to get all the settings from CLIENTRON and it’ll refresh the “VFDset.exe” software.
5. Select “Character Type”/ “Command Mode”/ “Baud Rate Select”/ “pass thru Mode”.



# 9

## VFDset Setup Software Utility Guide

The screenshot shows the 'Command Mode' dropdown set to 'EPSON(Default)' and the 'BaudRate Select' dropdown set to '9600,n,8,1(Default)'. The 'Passthru Mode' dropdown is set to 'None'.

6. Click "Set All Default" button To show default setting, the Default table is

Character Type : USA  
 Command Type : EPSON/EUROPE  
 Baud Rate Setting : 9600/n/8/1  
 Pass-through Mode : None  
 Welcome msg line1 : \*\*\* VFD DISPLAY \*\*\*  
 Welcome msg line2 : \*\*HAVE A NICE DAY AND THANK YOU \*\*

7. Welcome Message

Welcome Message line1 maximum 20 characters, line 2 maximum 20 characters, total of 40 characters.

- a. ASCII mode

The screenshot shows the 'Welcome Msg' tab selected. Under 'Welcome Message1', the 'ASCII' radio button is selected, and the message '\*\*\* VFD DISPLAY \*\*\*' is entered. Under 'Welcome Message2', the 'ASCII' radio button is selected, and the message '\*\*HAVE A NICE DAY AND THANK YOU \*\*' is entered. The 'Clear' button is visible next to each message field.

You can type the character by keyboard (0x20h ~ 0x7Fh), if you press clear icon, it will clear the all Message characters on AP.

- b. Hex mode

Hex mode can define the character from 0x20h to0xFFh , the range 0x80~0xFF which depends on the code page table.

# 9

## VFDset Setup Software Utility Guide

Like the first character (0x80) , in default code page will show on VFD module.

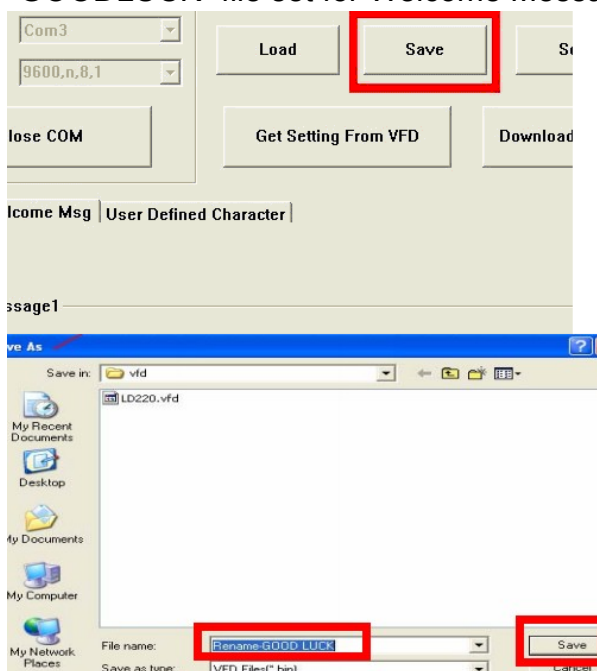
8. Click “Download setting to VFD” button

This button is to download the setting from VFDset.exe to VFD module. After success dialog “Download O.K! Please restart!” message popped up. Please restart display for enable new setting



9. Click “Save” button

To save user’s setting in file; for example, below picture to save file name as “GOODLUCK” file set for Welcome Message.

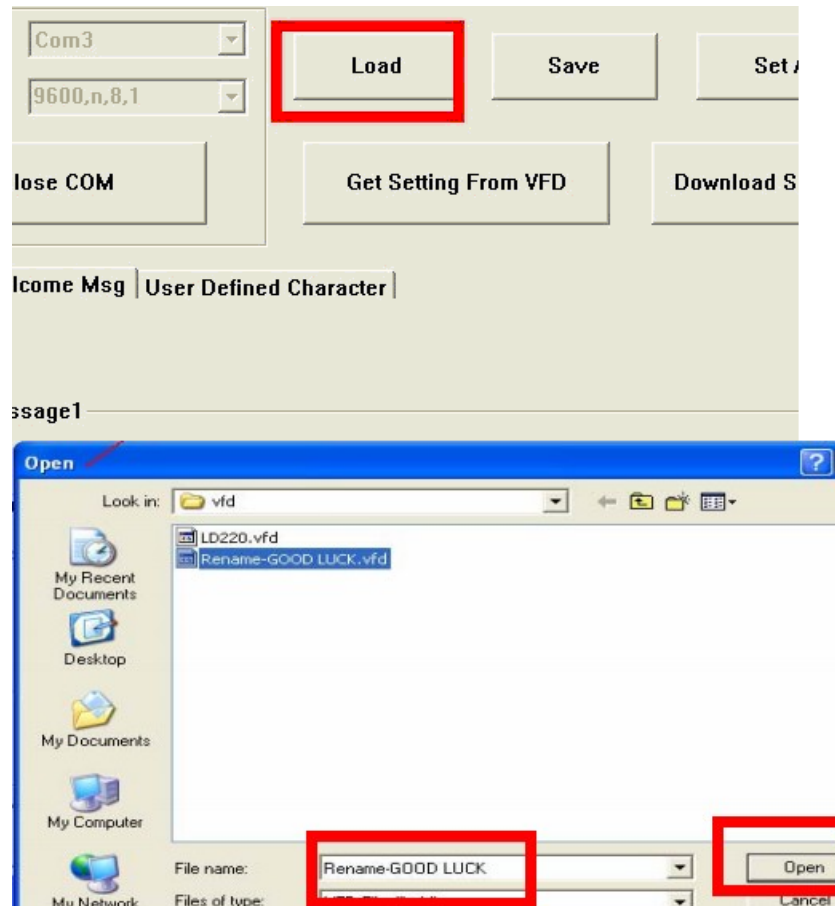


# 9

## VFDset Setup Software Utility Guide

### 10. Click "Load" button

After saving, you must restart the utility here. Then load your setting GOODLUCK.vfd.



# 10

## Character Set





























































































































































USA Font Table(ASCII)

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

# 10

## Character Set

Select international fonts the character differences, please refer to the following:

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA												
FRANCE												
GERMANY												
U.K												
DENMARK I												
SWEDEN												
ITALY												
SPAIN												
JAPAN												
NORWAY												
DENMARK II												
SLAVONIC												
RUSSIA												



# 10

## Character Set

PC437 Font Table

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



# 10

## Character Set

### Katakana for Japan

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

# 10

## Character Set

### PC860 (Portuguese)

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

# 10

## Character Set

### PC865 (Nordic)

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

# 10

## Character Set

### PC866 (RUSSIA)

#### PC866 (Cyrillic-2)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H	А	Б	В	Г	Д	Е	Ж	З	И	К	Л	М	Н	О	П	
90H	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
A0H	а	б	в	г	д	е	ж	з	и	к	л	м	н	о	п	
B0H	ё	ѐ	ѓ	і	ї	ѡ	ѣ	ѥ	ѧ	ѩ	ѫ	ѭ	ѯ	ѱ	ѳ	ѵ
C0H	ѿ	ѽ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ
D0H	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ	ѿ
E0H	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
F0H	ё	ѐ	ѓ	і	ї	ѡ	ѣ	ѥ	ѧ	ѩ	ѫ	ѭ	ѯ	ѱ	ѳ	ѵ



# 10

## Character Set

### PC858 (Euro symbol)

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

# 10

## Character Set

PC864 Font Table (Latin/Arabic)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H																
90H																
A0H																
B0H																
C0H																
D0H																
E0H																
F0H																

# 10

## Character Set

PC-852 Font Table

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

# 10

## Character Set

PC-862 Font Table

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



# 10

## Character Set

WPC1251 Font Table

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

# 10

## Character Set

WPC1252 Font Table

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

# 10

## Character Set

WPC1253 Font Table

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

# 10

## Character Set

WPC1254 Font Table

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

# 10

## Character Set

WPC1255 Font Table

L	H	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0										0		0		.	1	2	3
1										.		1	2	.	.	2	3
2										.	.	2	3	.	.	3	4
3										0	1	2	3	.	4	5	6
4										1	2	3	.	.	4	5	6
5										.	.	4	5	.	5	6	7
6										0	.	5	6	.	6	7	8
7										1	.	6	7	.	7	8	9
8										.	.	.	.	.	8	9	0
9										2	3	4	5	.	.	9	1
A											.	6	7	.	.	0	1
B										.	.	7	8	.	.	1	2
C											.	8	9	.	.	2	3
D											.	9	0	.	.	3	4
E											.	0	1	.	.	4	5
F											.	1	2	.	.	5	6