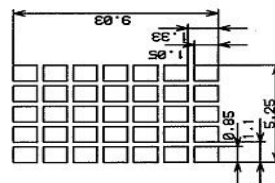
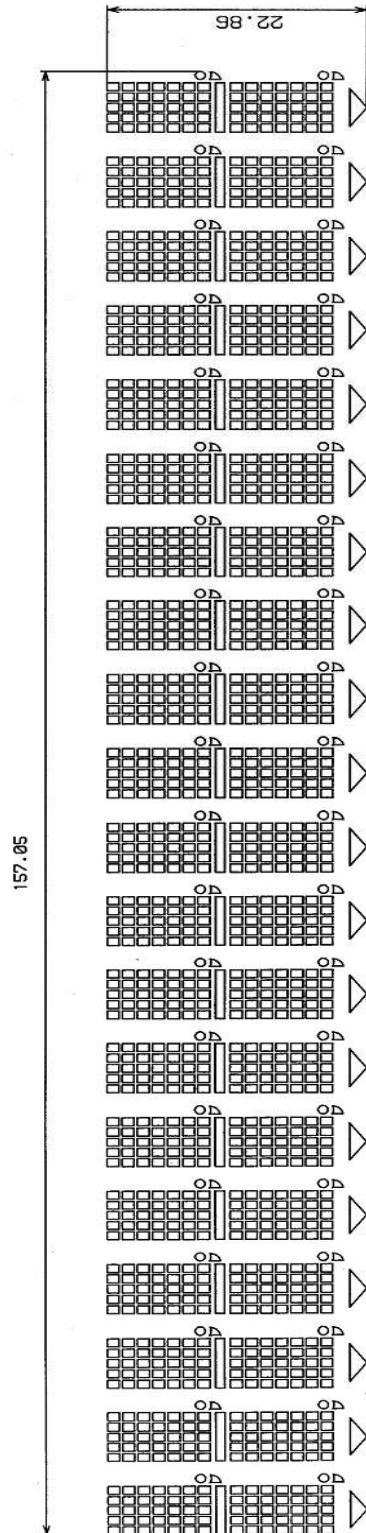


Features

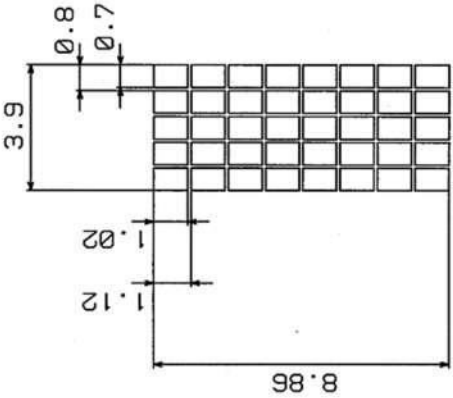
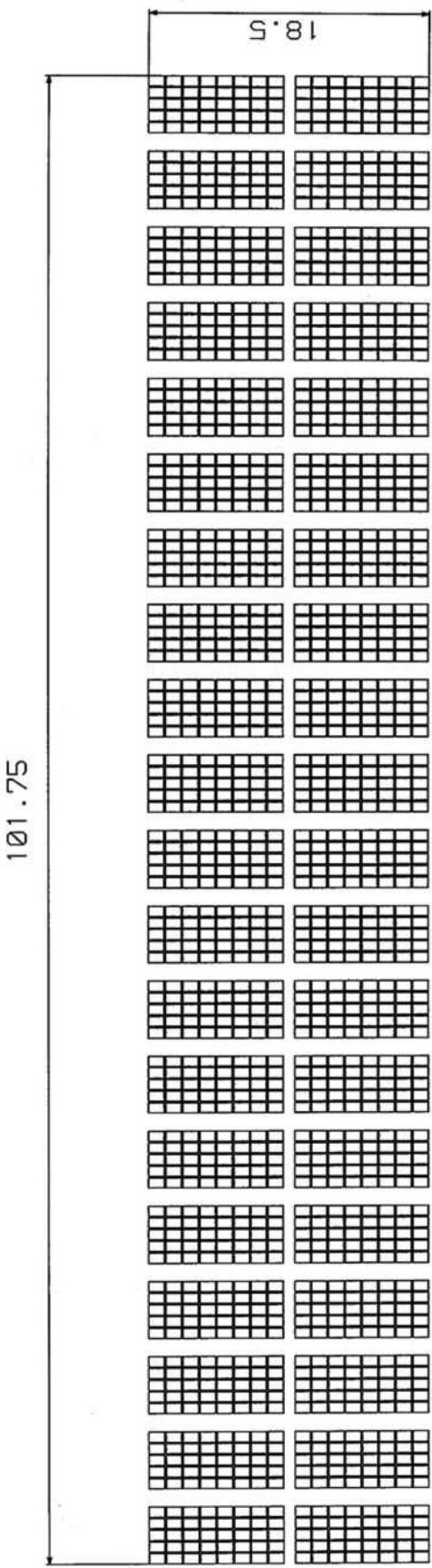
- The customer display is Vacuum Fluorescent Displays which display 20 columns and 2 lines, each columns is 5x7 dots.
- Blue-green fluorescent color is easy on the eyes.
- The interface of customer display is RS-232, with baud rates select from 9600, 19200, 38400, 57600 or 115200 bps.
- The customer display have provided the pass through function to reduce the cable connection.
- The user defined and international character sets are the standard of customer display.
- Supports 10 command modes, with EPSON command mode set as default.
- Supports 10 Font sets, with USA(PC437) Font set as default.
- One user font is supported, it can be downloaded and used by using "Language" Download function of CDP Setup Utilities.
- Easy configure & various settings through its free powerful set up software i.e. Welcome message and plenty of code pages setting and others setting.
- Panel is structured to easy-detachable and available for wall mounting install and OEM

Tube Display

PB_POS01



Customer Display	Vacuum Fluorescent Display Blue Green
Display Pattern	5X7 Dot Matrix
Character Type	95 Alphanumeric & 32 International Characters
Character Size	9.03(H) x 5.25(W)
Character Number	40 (20 Column x 2 Lines)
Character Pitch	See the figure below



COLOR OF ILLUMINATION

Green (G. x=0.24,y=0.41) - - - - All graphics.

Customer Display.	Vacuum Fluorescent Display Blue Green
Display Pattern.	5x8 Dot Matrix.
Character Type.	95Alphanumeric & 32 Intenational Characters.
Character Size.	8.86(H) x 3.9(W).
Character Number.	40 (20 Column2 x 2 Lines).
Character Pitch.	See the figure below.

Function Setting

- Interface : RS232
- Baud Rate Select 9600, 19200, 38400, 57600 and 115200 bps
- Command Type Select

Function Description	Software Defined
Command Type	Hex Code
LD220	00
EPSON POS D101	01
UTC Standard	02
UTC Enhance	03
AEDEX	04
ADM788	05
DSP800	06
CD5220	07
EMAX	08
LOGIC CONTEOL	09

- International Character Set

Function Description	
International Character Set (Code 20H-7FH)	Code Table (Code 80H-FFH)
U.S.A.	PC-437 (USA) (Standard European)
FRANCE	PC-850 (Multilingual)
GERMANY	PC-850 (Multilingual)
U.K.	PC-850 (Multilingual)
DENMARK I	PC-850 (Multilingual)
SWEDEN	PC-850 (Multilingual)
ITALY	PC-850 (Multilingual)
SPAIN	PC-850 (Multilingual)
JAPAN	Katakana
NORWAY	PC-865 (Nordic)
DENMARK II	PC-850 (Multilingual)
SLAVONIC/RUSSIAN	PC-437 (USA) (Standard European)
RUSSIAN	PC-866
GREEK	PC-737
CZECH	PC-852
LATIVAIN	PC-1257

LD220 Command Set

Command	Hex	Function Description
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 <i>International Font Set Table</i>)
ESC = n	1B 3D n	Select peripheral n=1, printer ; n=2, display ; n=3, printer & display

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

r 58h=all rows
55h=upper row
44h=lower row

n special function, the value is one of
30h=shift mode (Default display mode)
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

EPSON 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 n= 0, blinking is canceled
ESC @	1B 40	Initialize display
ESC t n	1B 74 n	Select character code table $0 \leq n \leq 5$ (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
ESC = n	1B 3D n	Select peripheral device n=1, printer ; n=2, display ; n=3, printer & display

Command	Hex	Function Description
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 $[n * 50\text{msec}]$ m: specifies the interval of macro execution every $[m * 50\text{msec}]$
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

※ EPSON Command Set 추가 – POSBANK(OPOS) Command

Command	Hex	Function Description
US EOT n m	1F 04 n m	n : $0 < n < 5$ 1 : Up Scroll 2 : Down Scroll 3 : Left Scroll 4 : Right Scroll m : $0 < m < 10$ specifies character count to jump while scrolling

* International Font Set Table

n (Hex)	International Font Set	n (Hex)	International Font Set
00h	U.S.A.	06h	ITALY
01h	FRANCE	07h	SPAIN
02h	GERMANY	08h	JAPAN
03h	U.K.	09h	NORWAY
04h	DENMARK I	0Ah	DENMARK II
05h	SWEDEN		SLAVONIC/RUSSIA

UTC Standard Command Set

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	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	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

UTC Enhance Command Set

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 x 45] 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

AEDEX Command Set

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 x 45] 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="!", m="#")
! # 9..CR	21 23 39 [data x 40] 0D	Two line display

ADM788 Command Set

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
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

DSP800 Command Set

Command	Hex	Function Description
EOT SOH I n ETB	04 01 49 n 17	Select international character set (Please refer <i>International Font Set Table</i>)
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 <u>n</u> position to <u>m</u> position and move cursor to <u>n</u> position $49 \leq n \leq m \leq 88$
EOT SOH A n ETB	04 01 41 n 17	Brightness adjustment $1 \leq n \leq 4$
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

n (Hex)	International Font Set
30h	U.S.A.
31h	FRANCE
32h	GERMANY
33h	U.K.
34h	DENMARK I
35h	SWEDEN
36h	ITALY
37h	SPAIN
38h	JAPAN
39h	NORWAY
3Ah	DENMARK II
XXh	SLAVONIC/RUSSIA
	RUSSIAN
	GREEK
	CZECH
	LATIVAIN

CD5220 Command Set

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 [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
LF	0A	Move cursor down
ESD [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 I x y	1B 6C x y	Move cursor to specified position $1 \leq x \leq 20$ (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) $1 \leq x1 \leq x2 \leq 20$ (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 $1 \leq n \leq 4$
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 = n	1B 3D n	Select peripheral device n=1, printer ; n=2, display ; n=3, printer & display

*** International Font Set Table**

n	International Font Set
A	U.S.A
G	GERMANY
I	ITALY
J	JAPAN
U	U.K.
F	FRANCE
S	SPAIN
N	NORWAY
W	SWEDEN
D	DENMARK I
E	DENMARK II
L	SLAVONIC
R	RUSSIA
	Reserved

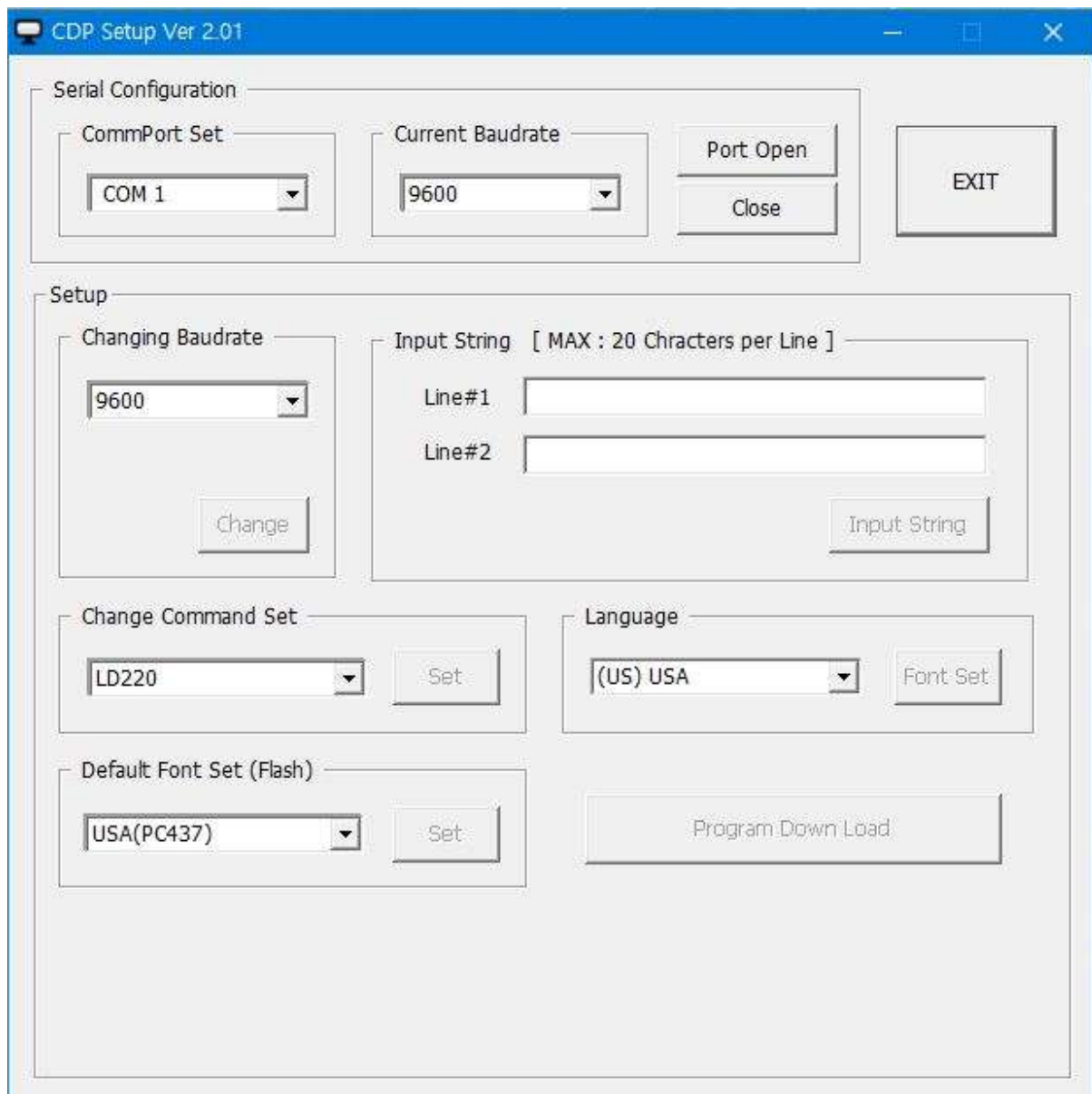
EMAX Command Set

Command	Hex	Function Description
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical mode
ESC DC3	1B 13	Horizontal scroll mode
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
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 I x y	1B 6C x y $1 \leq x \leq 20, y = 1, 2$	Move cursor to specified position
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 $1 \leq n \leq 4$	Brightness mode
ESC _ n	1B 5F n $n = 0, 1$	Set cursor ON/OFF
ESC f n	1B 66 n	Select international fonts
ESC = n	1B 3D	Select peripheral device, display or printer n = 1; enable printer, disable display n = 2; disable printer, enable display n = 3; enable printer, enable display

LOGIC CONTROL Command Set

Command	Hex	Function Description
^Q	11	Overwrite mode
^R	12	Vertical 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
^_	1F	Reset
^D n	04 n	Brightness mode 04 FF – 100% Brightness mode 04 60 – 60% Brightness mode 04 40 – 40% Brightness mode 04 20 – 20% Brightness mode

CDP Setup Software Utility Guide



1 With the PC and CDP connected via RS232, power on the CDP.

2 Run CDP_Utility_V201.exe for setup communication between display and Utility

Select "Comport Set" and "Current Baudrate", press "Port Open" for "Serial Configuration"

(Note: You may check the baud rate when power on the display)

3 If you want to change bps to the desired bps, Select new bps in "Changing Baudrate" in "Setup"

and Press "Change" button. The message "Setup is Changed" is displayed on CDP.

4 If you want to change to new command set, Select "Change Command Set" and Press "Set"

button. The message "Setup is Changed" is displayed on CDP.

5 To change font set you want, Select "Default Font Set(Flash)" and Press "Set" button.

The message "Setup is Changed" is displayed on CDP.

6 If you want to change the displayed string(except setup-string) when you turn on the power,

then Enter your string in the blink "Line#1" and "Line#2" of "Input String"

and Press "Input String" button.

After the message "Setup is Changed" displayed, New Message is applied and displayed.

7 To save Custom language font, Select language as you want and Press "Font Set" button.

The message "Setup is Changed" is displayed on CDP.

(Currently, same as existing)

8 "Program Down Load" function is limited feature.

Thanks