

USER'S MANUAL

FOR LINE THERMAL PANEL PRINTER

(MODEL : BTP320A)

A.1 FEATURES

- * AUTO PAPER LOAD
- * SERIAL RS232C OR PARALLEL
- * INTERNATIONAL CHARACTER SET
- * AUTO POWER-OFF PEATURES
- * 1KBYTE BUFFER
- * DOUBLE WIDTH/DOUBLE HEIGHT PRINTING
- * UNDERLINING
- * VERTICAL/HORIZONTAL TAB
- * FORM FEED
- * REVERS PRINTING
- * SELF TEST
- * INVERTED PRINTING
- * GRAPHICS
- * RESET COMMEND

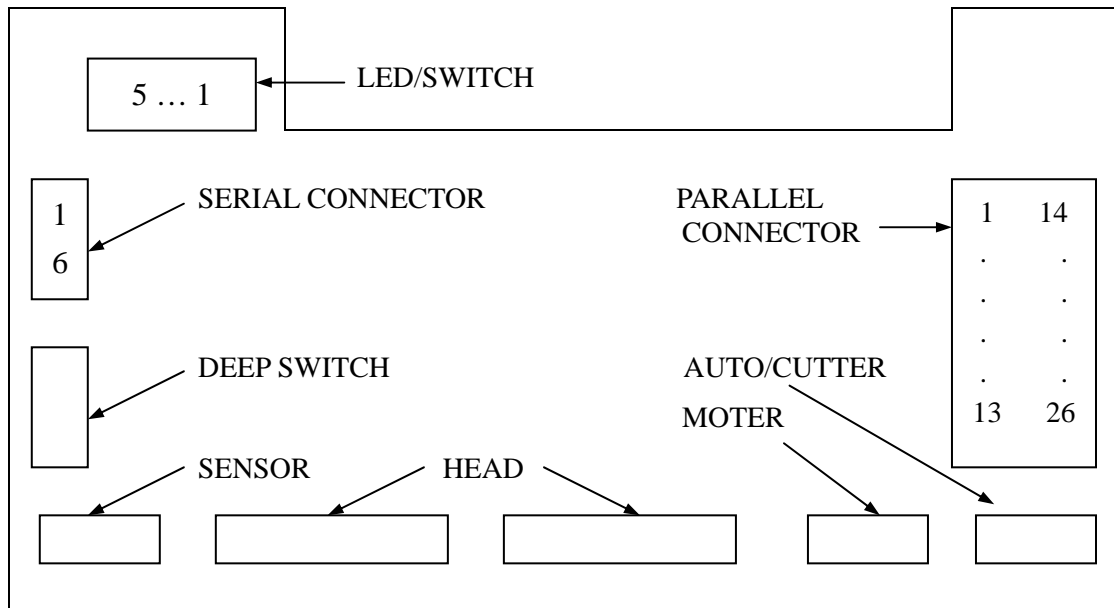
A.2 SPECIFICATIONS

| | |
|------------------------|---------------------------------------|
| * MODELS | BTP320A |
| * PRINTING METHOD | LINE THERMAL |
| * PRINT FONT | ENGLISH(14+2) * 22 KOREAN(28+4) |
| * 22 | |
| * INTERFACE | RS232C/PARALLEL |
| * PAPER WIDTH | 58mm |
| * PAPER LOADING METHOD | ROLL |
| * NUMBER OF COLUMNS | ENGLISH:36COLUMNS KOREAN:18COLUMNS |
| * TOTAL NUMBER OF DOTS | 576DOTS/LINE |
| * HEAD LIFE | $5 * 10^7$ PULESES 30km |
| * PRINT SPEED | MAX:25mm/sec |
| * DEMENTIONS(mm) | 121.8(W) * 52.5(D) * 122.4(H) |
| * POWER REQUIREMENT | 5V. 2.0A |

1. SPECIFICATION

- 1) SYNCHRONIZATION SYSTEM: ASYNCHRONOUS SYSTEM
- 2) BAUD RATE: 1,200/4,800/9,600/19,200/28,800/38,400/57,600
- 3) 1-WORD CONFIGURATION : START BIT : 1BIT
 DATA BIT : 8BIT
 PARITY BIT : NO PARITY
 STOP BIT : 1BIT

2. CONNECTOR CONNECTION DIAGRAM



2.1 LED/SWITCH

- 1 : PAPER FEED KEY
- 2 : DTR LED
- 3 : N.C.
- 4 : Vcc
- 5 : GND

2.2 SERIAL CONNECTOR

- 1 : Rx
- 2 : Tx
- 3 : DTR
- 4 : GND
- 5 : GND
- 6 : +5V(POWER)

2.3 PARALLEL CONNECTOR

- 1 : STROBE
- 2 : DATA0
- 3 : DATA1
- 3 : DATA2
- 5 : DATA3
- 6 : DATA4
- 7 : DATA5
- 8 : DATA6
- 9 : DATA7
- 10 : ACK
- 11 : BUSY
- 12~-17 : N.C
- 18~-26 : GND

3. INSTALLATION

3.1 DIP SWITCH SETTING

| 1 | 2 | 3 | BPS |
|-----|-----|-----|--------|
| OFF | OFF | OFF | 1,200 |
| OFF | ON | OFF | 4,800 |
| ON | ON | OFF | 9,600 |
| OFF | OFF | ON | 19,200 |
| ON | OFF | ON | 28,800 |
| OFF | ON | ON | 38,400 |
| ON | ON | ON | 57,600 |

| 4 | 5 | FONT |
|-----|-----|------------------|
| OFF | OFF | ENGLISH+GRAPHICS |
| OFF | ON | ENGLISH+KOREAN |
| ON | OFF | ENGLISH+KOREAN |
| ON | ON | ENGLISH+KOREAN |

| 1 | HANDSHAKING |
|-----|--------------|
| OFF | DTR |
| ON | X ON / X OFF |

| 7 | PRINT MODE |
|-----|------------|
| OFF | NORMAL |
| ON | INVERT |

| 8 | AUTO CUTTER |
|-----|-------------|
| OFF | NO CUTTER |
| ON | CUTTER |

4. PROGRAMING

4.1 COMMAND SUMMARY

| FUNCTION | COMMEND | HEXADEMICAL | DEMICAL |
|------------------------------|-------------|-----------------|-------------|
| SETTING RESET | DC1 | 11h | 17 |
| CANCEL CURRENT DATA | CAN | 18h | 24 |
| LINE FEED | LF | 0Ah | 10 |
| CARRAGE RETURN | CR | 0Dh | 13 |
| SET DOUBLE WIDTH | SO | 0Eh | 14 |
| CANCEL DOUBLE WIDTH | DC4 | 14h | 20 |
| SET DOUBLE HEIGHT | | 1Ah | 26 |
| HORIZONTAL TAB | HT | 09h | 09 |
| VERTICAL TAB | VT | 0Bh | 11 |
| TURN UNDERLINE ON/OFF | ESC_n | 1Bh, 5Fh, n | 27,95,n |
| PERFORM N LINE FEED | ESC F n | 1Bh, 46h, n | 27,70,n |
| SET HORIZONTAL TABS | ESC HT n | 1Bh, 09h, n | 27,09,n |
| SET VERTICAL TABS | ESC VT n | 1Bh, 0Bh, n | 27,11,n |
| CHARACTER SETTING | ESC L n | 1Bh, 4Ch, n | 27,76,n |
| ENLARGE WIDTH | ESC H n | 1Bh, 48h, n | 27,72,n |
| ENLARGE HEIGHT | ESC V n | 1Bh, 56h, n | 27,86,n |
| TURN REVERSE PRINTING ON/OFF | ESC R n | 1Bh, 52h, n | 28,82,n |
| INITIALIZE PRINTER | ESC @ | 1Bh, 40h, n | 27,64 |
| AUTO CUTTER | ESC c | 1Bh, 43h, n | 27,67 |
| IMAGE PRINT | ESC * n1 n2 | 1Bh, 2Ah, n1,n2 | 27,42,n1,n2 |

4.2 DEFUAT SETTING

| | |
|----------------|---------|
| ENLARGE WIDTH | 1 |
| ENLARGE HEIGHT | 1 |
| UNDERLINE | RELEASE |
| REVERSE | RELEASE |
| HORIZONTAL TAB | 8 |
| VERTICAL TAB | 4 |

4.3 COMMEND DISCRPTION

SETTING RESET

TRANSMIT DATA : > OE, "ABC", 0Dh

OUT PUT DATA : > ABCDEF

CANCEL CURRENT DATA

CANCEL ALL DATA IN CURRENT LINE

EX) > "ABC", 18h, "DEF", 0Dh

> DEF

LINE FEED

PRINT DATA CURRENT LINE IN BUFFER AND FEED 1 LINE

(CR,LF,CR+LF,LF+CR : FEED 1 LINE ONLY)

EX) > "ABC", 0Ah, "DEF", 0Dh

> ABC

DEF

CARRIGE RETURN

PRINT DATA CURRENT LINE IN BUFFER AND FEED 1 LINE

(CR,LF,CR+LF,LF+CR : FEED 1 LINE ONLY)

EX) > "ABC", 0Dh, 0ah, "DEF", 0Dh

> ABC

DEF

SET DOUBLE WIDTH

ALL CHARACTERS WILL BE PRINTED WITH DOUBLE-WIDTH AS NORMAL ONE AT INSIDE ONE LINE.NEXT LINE WILL BE RETURNED TO NORMAL CHARACTERS AUTOMATICALLY.

```
EX) > "1234567890"OE,"ABCDEFG",0Dh,"ABVDEF",0Dh
    > 1234567890ABCDEF
      ABCDEF
```

CANCEL DOUBLE WIDTH

CANCEL DOUBLE-WIDTH PRINTINGS IN ONE LINE DELECTED BY SO COMMAND.

```
EX) > "1234567890"OE,"ABCDEF",14h,"GHIJ",0Dh
    > 1234567890ABCDEF
```

SET DOUBLE HEIGHT

ALL CHARACTERS WILL BE PRINTED WITH DOUBLE-HEIGHT AS NORMAL ONE AT INSIDE ONE LINE.NEXT LINE WILL BE RETURNED TO NORMAL CHARACTERS AUTOMATICALLY.

```
EX) > "ABC",1Ah."DEF"0Dh,"1234567890",0Dh
    > ABCDEF
      1234567890
```

HORIZONTAL TAB

```
EX) > "12345678901234567890",0dh,"A",09h,"BC"09h,"DEF"0Dh
    > 12345678901234567890
      A   BC   DEF
```

VERTICAL TAB

EX) > "12345678901234567890"0Bh,"ABCDEF",0Dh

```
> 12345678901234567890      (1 line)
                               (2 line)
                               (3 line)
      A   BC       DEF      (4 line)
```

TURN UNDERLINE ON/OFF

UNDERLINE IS TURNED ON IF n=1 AND TURNED OFF IF n=0

EX) > "12345",1Bh,"_",01h,"ABCDEF",1Bh,"_",00h,"67890",0Dh

```
> 12345ABCDEF67890
```

PERFORM N LINE FEED

PRINT THE DATA OF PRINTER IF IT EXISTS AND LINE FEED N DOT-LINES FORWARD.

EX) > "1234567890"1Bh,"F",03h,"ABCDEF",0Dh

```
> 1234567890      (1 line)
                               (2 line)
                               (3 line)
                               (4 line)
      ABCDEF      (5 line)
```

SET HORIZONTAL TAB

THE HORIZONTAL TABS POSITION IS DEFINED AS n1,n2 ETC.ALL IT'S VALUES MUST BE LIMITED TO THE RANGE OF PRINTING WIDTH.

EX) > "1234567890123456789",0Dh,1Bh,09h,04h,0Bh,"ABCDEF"0Dh

```
> 12345678901234567890
      A   B   C
```

SET VERTICAL TAB

THE VERTICAL TABS POSITION IS DEFINED AS n1,n2 ETC.ALL IT'S VALUES MUST BE LIMITED TO THE RANGE OF PAGE LENGTH.

EX) > "1234567890"0Dh,1Bh,0Bh,04h,0Bh,"ABCDEF",0Dh

> 1234567890 (1 line)

(2 line)

(3 line)

(4 line)

ABCDEF (5 line)

CHARACTER SETTING

CHARACTER IS TURNED ENGLISH(INCLUDED GRAPHIC) IF n=0

KOREAN 1 + ENGLISH(ASCII CODE) IF n=1

n=2 : KOREAN2+ENGLISH(ASCII CODE)

ENLARGE WIDTH

CHARACTERS OR GRAPHICS FOLLOWINGS THIS COMMAND ARE PRINTED AT N TIMES NORMAL WIDTH,THE VALUE n MUST BE IN THE RANGE 1 TO 4.

EX) > "AB",1Bh,"H",02h,"CD",1Bh,"H",03h,"EF",1Bh,"H",01h,"GH",0Dh

> ABCDEF²GH

ENLARGE HEIGHT

CHARACTERS OR GRAPHICS FOLLOWINGS THIS COMMAND ARE PRINTED AT N TIMES NORMAL HEIGHT,THE VALUE n MUST BE IN THE RANGE 1 TO 4.

EX) > 1Bh,"V",02h,"ABCD",0Dh,1Bh,"V",03h,"ABCD",0Dh

1Bh,"V",01h,"ABCD",0Dh

> ABCD

ABCD

ABCD

TERN REVERSE PRINTING ON/OFF

REVERSE PRINTING IS TURNED ON IF n=0 OR TURNED OFF n=1.

EX) > "ABC",1Bh,"R",01h,"DEF",1Bh,"R",00h,"GHI",0Dh

> ABCDEF¹GHI

INITIALIZE PRINTER

RESET PRINTER(CLEAR BUFFER,RESTORE DEFAULT VALUES)

EX) > "12345",1Bh,"R",01h,"678",1Bh,"@", "ABCDEF",0Dh

> ABCDE

Auto Cutter

CUT PAPER IN PRESENT POSITION.

NOTE : PERFORM THIS COMMEND AFTER FEEDING OVER 2LINE WHEN PERFROM
THIS COMMAND AGAIN.

IMAGE PRINT

BY INPUTTING THIS COD,TEXT MODE IS CHANGED TO BIT IMAGE MODE.

N1 : NUMBER OF TIMES FOR REPEAT

N2 : NUMBER OF DATA

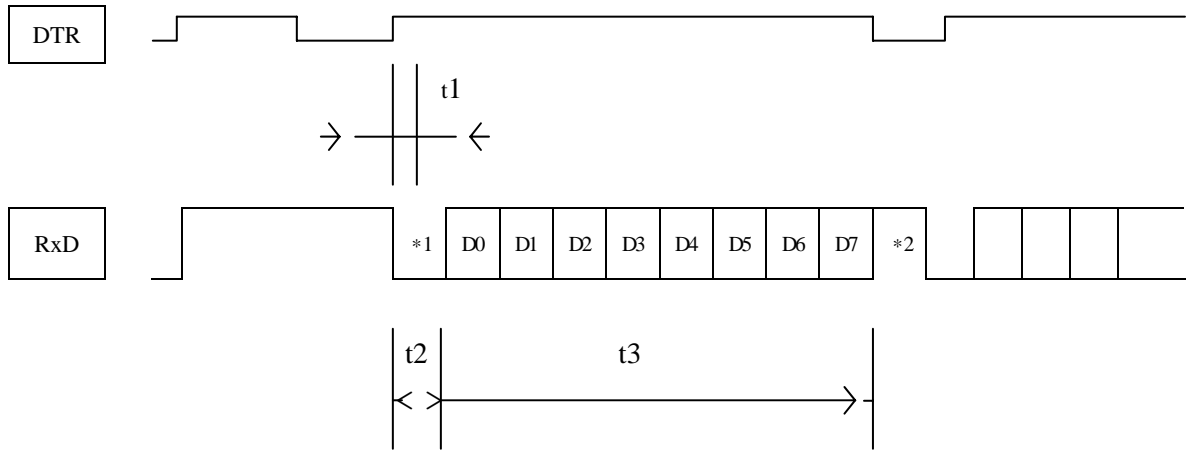
EX) > 1Bh"*",02h,03h,82h,69h5Ah,1Bh,"*",01h,03h,48h,30h,30h

>

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| X | | | | | | X | | | X | X | | X | | | | X | | X | X | X | | X | |
| X | | | | | | X | | | X | X | | X | | | | X | | X | X | X | | X | |
| | X | | | X | | | | | X | X | | | | | | | X | X | | | | | |

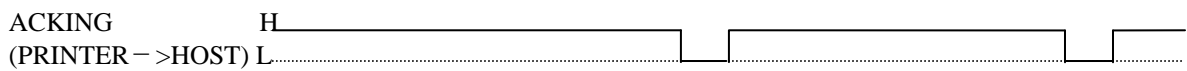
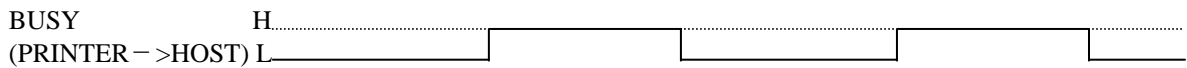
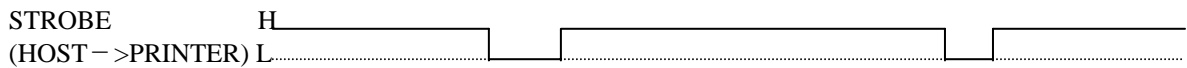
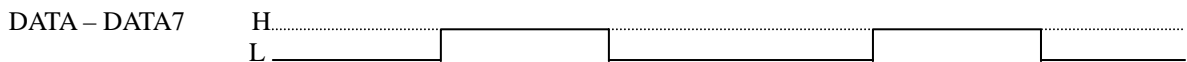
5. Timing Chart

5.1 Serial Data



* 1 : Start bit (1bit) * 2 : Stop bit (1bit)
 t1 : 39 – 71 Us, t2 : 125 – 187 Us, t3 : 583 – 875 Us

5.2 PAPALLEL DATA



CHAMJIN I&C CO., LTD.

3FLOOR, SHIN HYUP BLDG #404-27, WHAGOK-DONG

KANGSEO-KU, SEOUL, KOREA

TEL:822-2601-9882 FAX : 822-2601-9883

E-mail : chamjin.@hananet.net