

# Application

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This specification concerns the FTP-628DCL/DSL45Xseries(450-499)that controls the thermal printer mechanism FTP-628/638MCL4XXseries.

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Prior to use this product, refer to the precautions in the Appendix to insure careful handling. FTP-6X8DCL/DSL45X series include parts number as below,

		Mounted circuit or devices							
Part number		Cutter Flash Memory Circuit (Chinese Character Type)		SRAM: (Static Random Access Memory)	Interface				
(1)	FTP-628DSL490 FTP-638DSL490	Yes	No	No	Centronics/RS-232C				
(2)	FTP-628DSL491 FTP-638DSL491	Yes	No	Yes	Centronics/RS-232C				
(3)	FTP-628DSL493 FTP-638DSL493	Yes	Yes (Minchou)	Yes	Centronics/RS-232C				
(4)	FTP-628DSL498 FTP-638DSL498	Yes	Yes (Maru Gothic)	Yes	Centronics/RS-232C				
(5)	FTP-628DSL499 FTP-638DSL499	Yes	Yes (Minchou)	Yes	Centronics/RS-232C (with SW1,2, LED1,2)				



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	SECTION A Features								
ł	A The features of the printer unit using this control board and printer mechanism FTP-628/638MCL 4XXseries are as follows.								
	<ol> <li>Maximum TBD mm/second high-speed printing. (standard paper[PD150R,], high-speed collective image printing mode, only when SRAM is mounted, condition [voltage:8.5V, temperature 25 ])</li> </ol>								
_	2. Centronics conforming parallel interface, RS-232C interface.*1								
	3. Based on ESC/POS <sup>TM</sup> command. <sup>*2</sup>								
	4. Automatic starting point detection function by mark detection method is included.								
I	B 5. Paper cut function is included. <sup>*3</sup>								
	<ol> <li>Paper run out, platen open (head-up), head temperature abnormality, motor temperature abnormality, paper near end, head voltage abnormality functions are included.</li> </ol>								
_	7. Various papers can be selected by commands.								
	8. 384dots/line (628MCL), 576dots/line (638MCL) printing with 8 lines/mm high resolution.								
9. Stable printing quality by temperature detection function.									
(	<sup>C</sup> 10. Stable printing quality by thermal head driving voltage detection function.								
	11. 24 dots type character (12x24 dots font and 24x24 dots font), 16 dots type character (8x16 dots font and 16x16dots font) can be selected by commands.	11. 24 dots type character (12x24 dots font and 24x24 dots font), 16 dots type character (8x16 dots font and 16x16dots font) can be selected by commands.							
_	12. MCU operation abnormality detection function by watchdog timer is included								
	13. The circuit of motor over-current protection fuse is included.								
	14. Various bar code commands are supported.								
I	D 15. Character registration function is included. <sup>*4</sup>								
	16. Power down function is included.								
	Note *1) The interface circuits carried by the model differ. *2) ESC/POS <sup>TM</sup> is the registered trademark of Seike Epson Corp.								
N N	*3) The cutter drive dricuit can be specified by the model. *4) Only when Eash Memory or SRAM is mounted.								
	+) only when flaar menory of ore when findened.								
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DAIE	TITLE FTP-6X8DCL/DSL45X SERIES								
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ſ	3 (	Connector C	onstruction			1 1						
		Types a interface b	and pin co board.	nfigurations	of several	connectors are	e following. Dat	a direction is a loo	ok from the			
А	3.	1 <b>CN1</b> (Ce	ntronics i nterf	face connector	)							
		Referen	nce to secti	on D "Interfa	ace Specifi	cations".						
	3.	2 CN2 (RS	-232C interfa	ceconnector)								
		Referen	ice to secti	on D "Interfa	ace Specifio	cations".						
	3	3 CN3 (Th	armal bead d	iving connecto								
	5.	(1) Con	inector Typ	)e								
в		526	10-3071:	made by	Molex							
2		(2) Con	nector Pin	Configurati	on							
	No	Signa	al Name	Data D	Direction		Expla	anation				
	110.	628MCL	638MCL	628MCL	638MCL	628	MCL	638MC	CL			
	1			-		Cathode side	of paper run ou	ut sensor				
	2	PHE		Uu In	ipui put	Paper out det	ection signal					
	4	VH		0				a al aluda das as				
	5 VH Output				tput	Power supply for thermal head driving						
	6	6 DO Output				Printing data of	output signal					
	7	CLK		Ou	tput	Data communio	cation synchroniz	ing clock signal				
С	B GND					Ground of pov	wer supply for t	hermal head drivin	g			
	9	STB6	STB5	Output	Output	Head energizing	control signal	Head energizing con	trol signal			
	10	STB5	STB3	Output	Output	Head energizing	control signal	Head energizing con	trol signal			
	12	STB4	STB3	Output	Output	Head energizing	control signal	Head energizing con	trol signal			
	13	Vcc		-		Logicpowers	supply		0			
	14	ТМ		-		Head thermisto	or input					
	15	TMR	STB2	Output	Output	Head thermisto	or ground	Head energizing cor	ntrol signal			
	16	STB3	STB1	Output	Output	Head energizing	control signal	Head energizing cor	ntrol signal			
	17	STB2		Output	Output	Head energizing	control signal					
D	10	GND	ALUI	Output	Output			<u> </u>				
D	20	GND				Ground of pov	wer supply for t	hermal head drivin	g			
	21	LAT		Ou	tput	Printing data la	tch signal					
	22	DI		In	put	Printing data i	nput signal					
	23	VH				Power supply	for thermal hea	ad driving				
	24	VH		0	tout		lataction signal	-				
	25	SW		In	nut	Platen open d	letection signal					
	27	MT-A			put		lotoatorr agriar					
	28	MT-/A		Si	ink∕	Phase signal	for conveyance	motor				
1	29	MT-B		Sou	urce	i nase signa	ion conveyance					
	30	MT-/B										
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3.4 CN4 (Cutter Unit Connecto	3.4	CN4	Cutter	Unit C	onnector
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#### (1) Connector Type 52610-0871: made by Molex

## (2) Connector Pin Configuration

No.	Signal Name	Data Direction	Explanation
1	VSEN	Output	Power supply of Cutter home position sensor
2	PHE	Input	Cutter home position detection signal
3	PHK		Cathode side of Cutter home position sensor
4	MTA		
5	MT/A	Sink/	Cutter motor driving signals
6	MTB	Source	outtermotor driving signals
7	MT/B	1	
8	N.C		

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### **3.5 CN7** (Power supply Connector)

(1)Connector Type S6B-XH-SM3-TB: made by J.S.T

### (2) Connector Pin Configuration

No.	Signal Name	Data Direction	Explanation
1	Vcc	Input	Power supply for Logic
2	GND(Vcc)		Grond of power supply for Logic I
3	GND(Vdd)		Ground of power supply for thermal head and mortor
4	GND(Vdd)		Ground of power supply for thermal head and mortor
5	Vdd	Input	Power supply for thermal head and motor
6	Vdd	Input	Power supply for thermal head and motor

#### 3.6 CN8 (Paper Near End Sensor Connector)

- (1) Connector Type B2B-PH-SM3-TB: made by J.S.T
- (2) Connector Pin Configuration

No.	Signal Name	Data Direction	Explanation
1	Vcc		Power supply for Logic
2	/NES	Input	Paper near end detection signal

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4.1 Printing System Thermal printing system

### 4.2 Thermal Head Configuration

ltem	Specification				
item	FTP-628MCL	FTP-638MCL			
Resolution	8dots/mm				
Heating Unit Size	0.125mm (Vertical) x 0.125mm (Horizontal				
Number of Heating Units	384	576			
Effective Printing Area	About 54mm	About 72mm			

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### 4.3 Number of Digits of Print Characters

Print Mode	Туре		Number of digits				
T IIII WOOO	туре		FTP-628MCL	FTP-638MCL			
	Internal half size character	12x24	32	48			
	Internal full size character	24x24	16	24			
	Registered half size character	12x24	32	48			
Alphanumeric	Registered full size character	24x24	16	24			
Katakana	Internal half size character	8x16	48	72			
	Internal full size character	16x16	24	36			
	Registered half size character	8x16	48	72			
	Registered full size character	16x16	27	36			
Kanji <sup>2)</sup>	Kanji, non-kanji	24x24	16	24			
(Chinese Character)	Kanji, non-kanji	16x16	24	36			

### 4.4 Type of Print Characters and Character Configuration

Print Mode	Туре		Number of Characters
	Internal half size character	12x24	159
Alphanumeric	Internal full size character	24x24	159
Katakana	Internal half size character	8x16	159
	Internal full size character	16x16	159
	Registered half size character	12x24	224
Registered	Registered full size character	24x24	224
Characters '	Registered half size character	8x16	224
	Registered full size character	16x16	224
	Internal half size character	12x24	195
International,	Internal full size character	24x24	195
Special	Internal half size character	8x16	195
t0)	Internal full size character	16x16	195
Kanji <sup>2)</sup>	Kanji, non-kanji	24x24	About 6800
(Chinese Character)	Kanji, non-kanji	16x16	About 6800

\*1)Only when flash memory or SRAM is mounted \*2)Only when flash memory is mounted

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4.5	Print	Mode

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	(1)	Character Space

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Print Mode	Туре	Character Space (Number of dots)	
	Internal half size character	12x24	12
Alphanumeric	Internal full size character	24x24	24
Katakana	Internal half size character	8x16	8
	Internal full size character	16x16	16
	Registered half size character	12x24	12
Registered	Registered full size character	24x24	24
Characters	Registered half size character	8x16	8
	Registered full size character	16x16	16
Kanji	Kanji, non-kanji	24x24	24
(Chinese Character)	Kanji, non-kanji	16x16	16

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## (2) Line Feed

Print Mode	Туре	Line Feed (Number of dots)	
	Internal half size character	12x24	24 ~ 255
Alphanumeric	Internal full size character	24x24	24 ~ 255
Katakana	Internal half size character	8x16	16 ~ 255
	Internal full size character	16x16	16 ~ 255
	Registered half size character	12x24	24 ~ 255
Registered	Registered full size character	24x24	24 ~ 255
Characters	Registered half size character	8x16	16 ~ 255
	Registered full size character	16x16	16 ~ 255
Kanji	Kanji, non-kanji	24x24	24 ~ 255
(Chinese Character)	Kanji, non-kanji	16x16	16~255

# (3) Print Character Type

Print Mode	Type of Print Character
Alphanumeric Katakana	Internal half size character (12x24), Registered half size character (24x24) Internal full size character (24x24), Registered half size character (8x16) Internal half size character (8x16), Registered full size character (24x24) <sup>*1</sup> Internal full size character (16x16), Registered full size character (16x16) <sup>*1</sup>
Kanji (Chinese Character)	Non-kanji, kanji JIS Lever 1, Level 2 (conforms to JIS C6226-1983)

## (4) Extended Mode

Print Mode	Type of Print Character
Alphanumeric Katakana Kanji <sup>*1</sup> Non-Kanji <sup>*1</sup>	Horizontal double size, reverse order, black and white reversal, vertical double size, x4 size
Image ' (Chinese Character)	Reverse order, black and white reversal

\*1) Only when flash memory is mounted

## (5) Image Mode

	FTP-628MCL	FTP-638MCL
Max. Number of dots/line	384	576

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			<b>4.6</b> N (s	Printing Speed Aax TBD standard paper emperature 25	d [PD 150R,], h ])	igh-speed	collecti ve i m	age printi	ng mode	, only when SR	AM is mou	nted, condition	[voltage	ə: 8. 5V,	
	А		4.7	Printing Densi	it y		6					1.c. )			А
			С Г	DD Value: (	).8 or more	e (densit	y of solid k	plack pr	int area	under stand	dard print	condition)			
			-	Max. Numb	er of dots/	line	Specifie	d pape	r III		-				
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		5	Pape	er Feed Specif	ication									т	
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				opeanear		Standard	Ipaper			PD150R	(Oji	Paper)			
										TF60KS-E	(Jap	an Paper)			┢
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										PD170R	(Oji (Oji	Paper)			
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	С		Ļ	Paper Width	<u>ו</u>		58 +0 (-1	) mm	(4)		80 +0(-	·1) mm		4	С
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	D		(1) (2) (3) (4) (5) (6) (7) (8)	Paper feed Paper run Paper nea Platen ope Thermal he Voltage de Internal R/	In the function out detection r end detection ead tempe tection fun AM abnorm	ion funct ction fun n functio rature de action nality def	ion ction n etection fun function	nction	By *A By inte By ex By inte By inte	l F signal emal sensor ternal mecha emal mecha emal thermi:	ofprinte anicalswi nicalswit storofpri	r mechanisn tch ch of printe nter mechar	n r mech nism	nanism	D
			(9) (10 (11	))Mark detec )MCU operation	ction functi ation abno	on on ormality d	letection fu	Inction	By GS By wa	By GS < command By watchdog timer					
Z			(12 (13	2)Motor pow	er saving f	function	orotection	function	By no	werswitchin	a FFT				
ECT			(14	)Motor prot	ection fund	ction			By fus	e e	gı Li				
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	8	Power Consu	mption				
	8.1	Driving Head Voltage: Current:	24.0V ± 5% See the follo	wing table			
Α			Speed	Ultra High			
		Printing rate	Model	Speed Print Mode	Print Mode	Print Mode	Low Speed Print Mode
		12.5%	628MCL	TBD	TBD	TBD	TBD
		12.070	638MCL	TBD	TBD	TBD	TBD
		25.0%	628MCL	TBD	TBD	TBD	TBD
			638MCL	TBD	TBD	TBD	TBD
		50.0%	628MCL	TBD	TBD	TBD	TBD
			638MCL	TBD	TBD	TBD	TBD
ъ		100.0%	628MCL		TBD	TBD	TBD
в			638MCL	$\geq$	TBD	TBD	TBD
		Values ir • Cor	nside () indica nditions Voltage: Head resista	te peak values, a 7 nœ: 1	nd values outsid 7.2 V 69Ω (176Ω - 3%	e () indicate mear	ı values.
С	8.2 F	• The 2 Driving Mote Printer Motor	Ambient tem Paper: Printing dens e average cur or	perature: 2 Sity: A rent increases at	25°C Standard paper ( Applied dots are a the low tempera	equivalent to PD1 assumed to be event ture for the print d	50R) enly distributed. lensity ∞rrection.
		Voltage: Current:	6.0V-8.5V 628MCL4XX 638MCL4XX	( :0.8A (max) ( :1.0A (max)			
		Voltage: Current:	6.0V-8.5V 1.1A (max)				
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D		Current:	0.5A (max)				
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	А		No.	Signal name	Data direction	No.	Signal name	Data direction			А
			1	/PRSTB	Input	2	/PRSTB-RET		<u> </u>		
			3	PRDT0	Input	4	PRDT0-RET				
			5	PRDT1	Input	6	PRDT1-RET		_		
			9	PRD12 PRDT3	Input	8	PRDI2-REI				
			11	PRDT4	Input	12	PRDT4-RET				
			13	PRDT5	Input	14	PRDT5-RET				
			15	PRDT6	Input	16	PRDT6-RET				
			17	PRDT7	Input	18	PRDT7-RET				
	P		19	/ACKLNG	Output	20	ACKLNG-RE	=T	_		в
	Б		21	BUST RINE2	Output	22	BUSY-REI				Б
			25	/SLCTIN	Input	26	/INPRM	Input			
			27	RINF1	Output	28	RINF3	Output			
			29	/ATF	Input	30	GND				
	С		N A N Ir N T P	ionen) signal with an ' ionen) RET" signals an ionen) ionen	"/" indicates re all connec ctions indica ype is an Bl connector a product.	a nega sted to te dire M30B- at othe	ative logic signa GND. ctions from the SRDS-G-TFC er side, use an	al. e printer. (made by JS n SHDR-30V-4	ST) equivalent S-B (made by		С
				, , , ,							
		1.4 Re	ecomm	nended Cable S	Specificatio	ns					
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		1	.5	Descript	tions of Ir	nput Sigr	nals						
			Si	gnal Nar	ne				Fu	nction			
			PF	RDT0~7	1)	Input si	gnalsof8-	bit para	llel data.				
	А				2) 3)	"High" i PRDT0	ndicates th is the lea	at data st signi	exists (= ficant bit	:1); "Low" in t (LSB); PRI	dicates no data (=0). DT7 is the most signi	fica	nt bit
			/P	RSTB	1)	Strobe	signal to re	ad PR	DT0~7.				
					2)́	Normal	y "High". [	Dataisla	atched w	vhen "High"	changes to "Low".		
			///	IPRM	1) 2)	Signal to Normall	o initialize y "High".	printer A hard	ware res	set is exea	uted when "Low" cha	ange	es to
					3)	This sig	nal sets th	eprinte	rstatus a	as follows.			
					,	(1) Prir	t buffer				Clear		
						(2) Line	efeedpitch				About 3.25mm		
						(3) AN	K character	pitch			12dots / character		
	В					(4) Prir	it character	type			12x24 dots half size ch	ara	cter
						(5) Pag	e length se	tting			44 lines, about 143 mm	n	
						(6) Dou	uble width s	pecificati	ion		Clear		
						(7) Dou	uble height s	specifica	tion		Clear		
						(8) Bla	ck and white	e reversa	al printing		Clear		
						(9) Rev	erse order	printing			Clear		
						(10) Cha		;	o attin a		Set to Japanese chara	cter	S
						(11) Inte (12) Drin	ernational cr	aracters	setting		Japan		
						(12) F III (12) Hor	iting speed	otting			High-speed mode		
						(13)110i (14) Mar	k detection	to start i	noint setti	na	Every 8 characters		
						(15) Par		letection	settina	iig	About $2 \text{ mm}$		
	С					(16) Plat	en open de		ottina		Valid * 1		
						(10) Tar		a contra di	bu dotooti	on actting	Valid * 1		
						(17) Iell				onsetting	Valid * 1		
						(18) Nea	ar end deteo	tion sett	ing		Invalid <sup>*1</sup>		
						(19) Volt	age abnom	nality det	ection se	tting	Valid * <sup>1</sup>		
						(20) Pap	er ty pe				Continuous paper		
						(21) Kar	iji print mod	e specifi	cation		Clear		
						(22) Prir	it quality se	tting			Standard paper		
						(23) x4 s	size print me	ode spec	rification		Clear		
						(24) Kar	iji code sett	ing			JIS code		
	D					(25) 90°	character r	otation			Clear		
	D					(26) Pap	er auto-fee	d amour	nt setting		20mm		
						(27) Mot	or off-times	setting			One excitation time = $0$	).5 s	ec
						(00) <b>D</b> :					Excitation holding time	= 1:	sec
7						(28) Prir *1: Tl	nis can be	setting set to ir	nvalid by	the /SLCTI	Line printing mode V signal.		
ECTO					4)	If the /A mode is	TF signal i set.	n "Low"	statusi	sinitialized	by this signal, the test	fur	nction
С S					5)	Only init	ialization i	sexecu	ted with	out printing o	lata in the buffer.		
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Signal Name	Function
/ATF	1) Paper feed request signal
	2) Normally "High". Paper is fed in "Low" status.
	3) When paper is fed by this signal, the internal processing time is not constant
	Use the line feed command for a more accurate paper feed.
	4) When this signal is received, a line feed is executed by setting the BUS' signal to "High". If an error dose not occur after a line feed, the BUSY signal becomes "I ow" and the printer enters data receive enable status.
	<ul> <li>5) When paper is fed by receiving this signal, the position on the page does no change. If paper is fed by the new page command after paper is fed by thi signal, the page start position deviates.</li> </ul>
	<ol> <li>If this signal in "Low" status is initialized by the /INPRM signal or the power supply is turned on, the test function mode is set.</li> </ol>
/SLCTIN	1) Signal that makes the detection functions of initial setting invalid
	2) If power is turned ON or if initialization by the /INPRM signal is execute
	when this signal is "Low", paper run out detection, paper near end, plate
	open detection, head temperature abnormality detection, motor temperature abnormality detection, head driving voltage abnormality detection and paper

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DOCUMENT CONTROL SECTION

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A A A BUSY BUSY BUSY BUSY BUSY A BUSY BUSY B BUSY A BUSY B B B B B B B B B	RINF2 High High Low Low High Low Eatus. tus. ter is in off-	pletes. eived. ; and when RINF3 Low Low Low High High High High High
A       2) Negative Hogic pulse signal, which is object with means that data can 2) This signal is "High" when receiving data, printing, feeder or status and in initialization operation.         RINF1-3       1) This signal indicates the error status of the printer.         2) The following table shows each error status.         B       Error status         C       Paper run out         D       Error status         B       Error status         B       Error status         C       Platen open         High       Error status         C       Paper near end         High       Error status         C       Platen open         High       Error status         R       Error status         B       Error status         C       Head voltage abnormality         Low       Low         S       Each error status is output in the following status.         a. Paper near end is detected.       Corrected         C       Platen open is detected and printer is in off-line status         D       Paper near end is detected.	RINF2 High High Low Low High Low Low Eatus. tus. ter is in off-	RINF3 RINF3 Low Low Low High High High High High
2)       This signal is "High" when receiving data, printing, feederor status and in initialization operation.         RINF1~3       1)       This signal indicates the error status of the printer.         2)       The following table shows each error status.         a       Paper run out       Low         b       Paper run out       Low         b       Paper run out       Low         b       Paper near end       High         c       Platen open       High         d       Head Voltage abnormality       Low         b       Paper run out is detected and printer is in off-line status is output in the following status.       a. Paper run out is detected and printer is in off-line status is output in the following status.         a       Paper near end is detected.       c.       Platen open is detected and printer is in off-line status is output in the following status.         a       Paper near end is detected.       c.       Platen open is detected and printer is in off-line status is output in the following status.         a       Paper near end is detected.       c.       Platen open is detected.         c       Disconnet of in TBD range.       f.       The following hardware abnormality is detected and printer is in off-line status of the open is occurred         c       Internal RAM abnormality       Out in TBD range.       f. <td>RINF2 High High Low Low High High Low Low tus. ter is in off-</td> <td>RINF3 Low Low High High High Low High</td>	RINF2 High High Low Low High High Low Low tus. ter is in off-	RINF3 Low Low High High High Low High
error status and in initialization operation.         RINF1-3       1) This signal indicates the error status of the printer.         2) The following table shows each error status.         Error status       RINF1-3         2) The following table shows each error status.         Error status       RINF1-3         2) The following table shows each error status.         Error status       RINF1-3         2) The following table shows each error status.         Error status       RINF1-3         3) Each error status is output in the following status.         a. Paper run out is detected and printer is in off-line side tected.         c       Paper near end is detected and printer is in off-line side characted and printer is in off-line side tected.         c       Paper run out is detected and printer is in off-line side characted and printer is in off-line side characted.         c       Paper near end is detected.         c       Paper near end is detected and printer is in off-line side.         d. Head temperature abnormality       Status and the elected is in hardware elected.         c       Internal RAM abnormality         d. Head temperature abnormality       Olyowing the addition of platen openclose.)         g. Thermorun away of head       MCU is in hardware reset status.         is Disconnect of head cable       Cutter abnormality (ON) it	RINF2 High Low Low High High Low Low :atus. ter is in off-	RINF3 Low Low High High Low High
C       1) The signal inductes how seach error status.         2) The following table shows each error status.         4) Paper near end         4) High         c. Platen open         6. Head voltage abnormality         1) In Normal         2) Mark detection abnormality         4) High         6. Head voltage abnormality         7. Hardware abnormality         8         3) Each error status is output in the following status.         a. Paper run out is detected and printer is in off-line status is output in the following status.         a. Paper run out is detected and printer is in off-line status error status is output in the following status.         a. Head temperature abnormality is detected and printer is in off-line status for lowing voltage is not in TBD range.         f. The following hardware abnormality         9       Watch-dog is occurred         6       Thermor run away of head         7       Thermor run away of head         8       Output is in hardware-reset status.         9	RINF2 High Low Low High Low Low tatus. tus. ter is in off-	RINF3 Low Low High High Low High
B       Error status       RINF         a.       Paper run out       Low         b.       Paper near end       High         c.       Platen open       High         d.       Head Temperature abnormality       High         e.       Head voltage abnormality       Low         f.       Hardware abnormality       Low         f.       Hardware abnormality       Low         g.       Mark detection abnormality       Low         h.       Normal       Low         3)       Each error status is output in the following status.       a.         a.       Paper near end is detected.       Cov         b.       Paper near end is detected.       Cov         c       Platen open is detected and printer is in off-line status       d. Head temperature abnormality is detected and printer is in off-line state.         c       Head temperature abnormality is detected.       cov         c       Platen open is detected.       cov         d.       Head temperature abnormality       states are detecte         in termal RAM abnormality       Watch-dog is occurred       Thermo run away of head         in termal Status       Disconnect of head cable       Cutter abnormality (Only it can retum fm state by motion of plate	RINF2         High         Low         Low         High         Low         High         Low         tus.         ter is in off-         .         n hardware	RINF3 Low Low High High Low High
a.       Paper run out       Low         b.       Paper near end       High         c.       Platen open       High         d.       Head Temperature abnormality       High         e.       Head voltage abnormality       Low         f.       Hardware abnormality       Low         g.       Mark detection abnormality       Low         h.       Normal       Low         a)       Each error status is output in the following status.       a.         a.       Paper run out is detected and printer is in off-line state       detected.         c.       Platen open is detected and printer is in off-line state       d.         d.       Head driving-voltage is not in TBD range.       f.         f.       The following hardware abnormality is detected and printer is in off-line state       internal RAM abnormality         watch-dog is occurred       Thermor run away of head       MCU is in hardware-	High High Low High High Low Low tatus. ter is in off-	Low Low High High Low High
b.       Paper near end       High         c.       Platen open       High         d.       Head Temperature abnormality       High         e.       Head Voltage abnormality       Low         f.       Hardware abnormality       Low         g.       Mark detection abnormality       Low         h.       Normal       Low         3)       Each error status is output in the following status.       a.         a.       Paper near end is detected and printer is in off-line status off-line status of the provide the status of the provide the status.       a.         g.       Paper near end is detected.       c.       Platen open is detected and printer is in off-line status of the provide the status.         g.       Paper near end is detected.       c.       Platen open is detected and printer is in off-line status of the provide the status of the provide the status.         g.       Paper near end is detected.       c.         f.       The following hardware abnormality detected and printer is in off-line status of the status of the status.         g.       Head temperature abnormality on in TBD range.         f.       The following hardware abnormality         watch-dog is occurred       Internal RAM abnormality         g.       Watch-dog is occurred         g.       Ther	High Low High Low Low Low tatus. tus. ter is in off-	Low Low High High Low High
B       C. Platen open       Plight         B       Head Temperature abnormality       High         E       Head Voltage abnormality       Low         F       Hardware abnormality       High         g. Mark detection abnormality       Low         h. Normal       Low         3)       Each error status is output in the following status.         a. Paper run out is detected and printer is in off-line       b. Paper near end is detected.         c. Platen open is detected and printer is in off-line st       d. Head temperature abnormality is detected and printer is in off-line st         d. Head tronge is not in TBD range.       f. The following hardware abnormalities are detected         r       Internal RAM abnormality         watch-dog is occurred       r Thermo run away of head         watch-dog is not in return from status by motion of platen open-close.)       g. Printer is in the following status.         watk is not detected within page       During printer initialization         h. Normal status       Year of platen open-close.)         g. Printer is in the following status.       mark undetected	Low Low High Low Low tatus. tus. ter is in off-	Low High High Low High
B       0.       Freed reinperadure abnormality       Tright         e.       Head voltage abnormality       Low         f.       Hardware abnormality       Hight         g.       Mark detection abnormality       Low         h.       Normal       Low         3)       Each error status is output in the following status.       a.         a.       Paper run out is detected and printer is in off-line status of the detected and printer is in off-line status.       b.         b.       Paper near end is detected.       c.       Platen open is detected and printer is in off-line status.         d.       Head temperature abnormality is detected and printer is in off-line status.       d.       Head temperature abnormality is detected and printer is in off-line status.         c       Platen open is detected and printer is in off-line status.       f.       The following hardware abnormality: detected and printer is in off-line status.         c       Head temperature abnormality       Watch-dog is occurred       f.       Thermo run away of head         d.       Head temperature abnormality       Watch-dog is occurred       f.       Thermo run away of head         d.       MCU is in hardware-reset status.       Disconnect of head cable       f.       Cutter abnormality (Only it can return from state by motion of platen open-close.)         g	High High Low Low tatus. tus. ter is in off-	High High Low High
c       intervent       intervent       intervent       intervent         f       Hardware abnormality       High         g       Mark detection abnormality       Low         3)       Each error status is output in the following status.         a.       Paper run out is detected and printer is in off-line         b.       Paper near end is detected.         c.       Platen open is detected and printer is in off-line status.         d.       Head temperature abnormality is detected and printer is in off-line status.         e.       Platen open is detected.         c.       Platen open is detected.         c.       Platen open is detected.         d.       Head temperature abnormality is detected and printer is in off-line status.         d.       Head temperature abnormality is detected and printer is in off-line status.         e.       Head driving-voltage is not in TBD range.         f.       The following hardware abnormality         e.       Head driving-voltage is not in TBD range.         f.       The following hardware abnormality         watch-dog is occurred       •         f.       Thermorun away of head         e.       MCU is in hardware-reset status.         f.       Disconnect of head cable         f.	High Low Low tatus. tus. ter is in off-	High Low High
g.       Mark detection abnormality       Low         h.       Normal       Low         3)       Each error status is output in the following status.       a.         a.       Paper run out is detected and printer is in off-line       b.         b.       Paper near end is detected and printer is in off-line st       d.         c.       Platen open is detected and printer is in off-line st       d.         d.       Head temperature abnormality is detected and printer is in off-line st         d.       Head temperature abnormality is detected and printer is in off-line st         e.       Head temperature abnormality is detected and printer is in off-line st         d.       Head temperature abnormality is detected and printer is in off-line st         d.       Head temperature abnormality is detected and printer is in off-line st         e.       Head temperature abnormality is detected and printer is in off-line st         d.       Head temperature abnormality is detected and printer is in the following status.         f.       The following hardware abnormality         watch-dog is occurred       Thermo run away of head         f.       MCU is in hardware-reset status.         f.       Disconnet of head cable         f.       Cutter abnormality (Only it can return from state by motion of platen open-close.)	Low Low tatus. ter is in off-	Low High off-line stat
h. Normal       Low         3) Each error status is output in the following status.       a. Paper run out is detected and printer is in off-line         b. Paper near end is detected.       c. Platen open is detected and printer is in off-line st         c. Platen open is detected and printer is in off-line st       d. Head temperature abnormality is detected and printer is in off-line st         c. Platen open is detected.       c. Platen open is detected and printer is in off-line st         d. Head temperature abnormality is detected and printer is in the following hardware abnormality       e. Head driving-voltage is not in TBD range.         f. The following hardware abnormalities are detected       Internal RAM abnormality         watch-dog is occurred       Thermor run away of head         MCU is in hardware-reset status.       Disconnect of head cable         c Cutter abnormality (Only it can return from state by motion of platen open-close.)       g. Printer is in the following status.         g. Printer is in the following status.       Mark is not detected within page         b During printer initialization       h. Normal status         4) Error detection priority       Hardware > head voltage > head temperature > paper         b mark undetected       mark undetected	Low tatus. terisinoff	<u>High</u> off-line stat
3)       Each error status is output in the following status.         a.       Paper run out is detected and printer is in off-line         b.       Paper near end is detected.         c.       Platen open is detected and printer is in off-line si         d.       Head temperature abnormality is detected and printer is in off-line si         e.       Platen open is detected and printer is in off-line si         d.       Head temperature abnormality is detected and printer is in off-line si         e.       Head driving-voltage is not in TBD range.         f.       The following hardware abnormalities are detected         f.       The following hardware abnormality         state driving-voltage is occurred       Internal RAM abnormality         f.       The following status.         f.       Thermor run away of head         f.       MCU is in hardware-reset status.         f.       Disconnect of head cable         f.       Cutter abnormality (Only it can return from state by motion of platen open-close.)         g.       Printer is in the following status.         f.       Mark is not detected within page         f.       During printer initialization         h.       Normal status         4)       Error detection priority         Hardware > head voltage > head	tatus. terisinoff n hardware	off-line stat
	un out > pla near end :	platen ope d > norma
TITLE FTP-6X8D0		
	./DSL45X \$	X SERIES



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2.3 Communication	Format				
(1) XON / XOFF contro	ol :	Communication buffer. (XOFF then XON con bytes or more by dipswitch.	on is controlled by issent when wha de issent when e.) Thisis invalid w	v what remains t remains is 10 what remains when DSR / D <sup>-</sup>	in the reœive bytes or less, becomes 20 TR is selected
(2) Receive buffer leng	th:	45 bytes / 409	96 bytes (selected	by dip switch)	
(3) Receive error proc	essing:	When a recei	ve error occurs (ex	k. parity, flamir	ng) this data is
ignored and printing rest	arts from the next	data.			
<b>2.4 Pin Configuration</b> (1) Connector numl	n of Input/Output per: CN2	Signals			

(1) Connector number:

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- (2) Connector type: S8B-ZR-SM3A-TF (made by JST)
- (3) Connector Pin Configuration

	Signal Name	Direction	Function
1	RXD	Input	Receive data
2	TXD	Output	Transmission data
3	DTR	Output	Data terminal ready
4	GND		Signal ground
5	DSR	Input	Data set ready
6	/SLCTIN	Input	Detection setting invalid signal
7	/INPRM	Input	Initialize request signal
8	/ATF	Input	Paper feed request signal

## NOTE1)

Input/Output directions indicate directions from printer.

NOTE2)

For the connector of the other side, use an ZHR-8 (made by JST) equivalent product.



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			2.5	Descrip	tion of Sig	gnals		1	1		-		· · ·
	A			Signal RXD	Name	(1) Seria (2) "Spa (3) The Start Note	ll data inp ce" indica data forma b0 b1 e *1) Leng	ut signa ites no o at is as b2 th of sto	al. Data data (= 0 follows. b3 b pp bit is	Function       signal to be       oignal to be       o), "Mark" in       o4     b5       1     bit fixed.	e transferred from he ndicates that data e b6 b7 Parity	ost to pr xists (= Stop	inter. 1). <sub>A</sub>
	В	•		TXD		<ul> <li>(4) Start</li> <li>(5) Comiseled</li> <li>(1) Seria host.</li> <li>(2) When sent printe</li> </ul>	bit is "Sp municatio cted by dip il data ou n XON/X( in data re er returns	ace" an ace" an on spec oswitch. itput sig OFF co ceive di to data	d stop b ed sett gnal. Da ntrol is s sabled s receive	s 8 bits. it is "Mark" ing (1920 ata signal t selected by status. XON enable sta	0,9600,4800,2400bj o be transferred fr dipswitch, XOFF o l code (11H) is sent tus.	ps) car om prin code (1: to host	n be terto в 3H)is when
	C			DTR		<ul> <li>(3) Othe</li> <li>(1) Outp</li> <li>(2) "Spa recei</li> <li>(3) If data</li> <li>(4) "Marl abno "Marl</li> </ul>	r function ut signal t ce" indic ve disable ta is sent is ignored k" is outpu rmality is	s are the to indicates dates d	e same ate that p ta rece ost whe g initialized. Whe	as RXD. printer is in vive enable n this signa zation, rece en XON / X uitialization	data receive enable status, "Mark" in al is "Mark", an erro ive buffer full status COFF control is set	e status. Idicates or occurs and wh by dips	data s and en an witch,
				DSR /ATF		<ul> <li>(1) Input</li> <li>(2) When transprinte</li> <li>(3) When and s</li> <li>(1) Pape</li> </ul>	signal to n this si mission e er does no n XON/X0 sends dat er feed reo	indicate gnal is enable, s of send OFF co a. quest sig	e that pr s "Space and sen data. ntrol is s	interisind ce", printe dsdatato setbydips	ata transmission en r judges the stat host. When this sign witch, printer ignore	able sta :us as nal is "N es this s	tus. data /lark", signal
	D					<ul> <li>(2) Norm</li> <li>(3) When const</li> <li>(4) When dipsy beco</li> <li>(5) When</li> </ul>	nally "High n paper i tant. Use n paper i vitch sign mes "Mar n paper is	n". Pape is fed k the line is fed k al XOF rk". s fed by	erisfed by this s feed co by this s F code i receivir	in "Low" sta signal, the mmand for signal, whe is sent, wh na this sign	atus. internal processing a more accurate pa an XON/XOFF cont en DTR/DSR contro al. the position on th	g time i aperfee trol is s ol is set ne page	s not d. et by DTR does
DOCUMENT CONTROL SECTION	ŗ.			/SLCTIN	N	(c) when not c by th (6) If thi powe (1) Signa (2) If pow when open temp detec	thange. If is signal, s signal i ar supply i al that ma wer is turr this sign detection erature al ction and	paper i the pag n "Low s turned kes the ned ON al is "Lo n, head bnorma paper fe	s fed by e start p " status d on, the detection or if inition bw", pap temperativy dete eed by //	the new p position dev is initialize test function functions alization by er run out o ature abnor ction, head ATF signal	ai, the position of the page command after iates. ed by the /INPRM on mode is set. s of initial setting inv y the /INPRM signal detection, paper near mality detection, mo I driving voltage abn become invalid.	r page r paper signal o alid is exec ar end, p otor ormality	uted olaten
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		Signal	Name			Function			
		/INPRM		<ul><li>(1) Signal to initial</li><li>(2) Normally "Hig</li></ul>	lize printer h". A hardwar	e resetis e	executed when "Low	v" changes	s to
A				"High". (3) This signal set	ts the printer s	tatus as foll	OWS.		
				(1) Print buffe	r .		Clear		
				(2) Line feed	pitch		About 3.25mm		
				(3) ANK chara	acter pitch		12dots / character		
				(4) Print chara (5) Page lengt	acter type th setting		12x24 dots half size	character	
				(6) Double with	dth specification	l	Clear	1111	
				(7) Black and	white reversal p	printing	Clear		
				(8) Reverse o	rder printing		Clear	radara	
_				(10) Internation	nal character set	ting	Japan	racters	
В				(11) Printing sp	beed setting	0	High-speed mode		
				(12) Horizontal	tab setting		Every 8 characters		
				(13) Mark deter (14) Paper run	ction to start poi out detection se	int setting atting	About 2 mm		
				(15) Platen ope	en detection sett	ing	Valid *1		
_				(16) Temperatu	ire abnormality	detection	Valid *1		
				setting (17) Near and (	detection setting	,	less a liel		
				(18) Voltage at	phormality detection	, tion setting	Malid *1		
				(19) Paper type	e	0	Continuous paper		
0				(20) Kanji print	mode specifica	tion	Clear		
C				(21) Kanji code	setting		JIS code		
				(22) Double he (23) x4 size pri	ight specificatio	n cation	Clear		
_				(24) Print qualit	ty setting		Standard paper		
				(25) 90° charac	cter rotation		Clear		
				(26) Paper auto	ofeed amount s . ".	etting	20mm		
				(27) Motor off-t	n besettoinva	alid by the /S	One excitation time = Excitation holding tin SLCTIN signal.	= 0.5 sec ne = 1sec	
D				(4) If the /ATF si	gnalin "Low"	status is i	nitialized by this sig	gnal, the t	test
				<ul> <li>(5) Only initializati</li> <li>(6) During initializati does not occur code is sent, v</li> </ul>	ion is executed ation, DTR ou r, when XON/ when DTR/DS	d without pri tputs "Mark' XOFF contr R control is	inting data in the bu Afterinitialization rol is set by dipswite set DTR becomes wan XON/XOEE cor	ffer. end if an ei ch signal X 'Space". A	rror ON (fter
				dipswitch XOF	FF code is ser	it, when DT	R/DSR control is se	et DTR kee	eps
				"Mark".					
4									
_									
						TITLE F	TP-6X8DCL/DSL45	X SERIES	;
$\dashv$						DRW NO	PRODUCT SPECIF	CATION	
									JUST.
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							SI Functior	ECTION nal Speci	F ficatio	n			
	А	1	Centronio	cs Inter	rface S	pecificati	on						А
		1.1	Test Print	Functi	on								
			Test Print Function	(1) T /I (2) T	he self INPRM he mo	test print signal is de automa	function is executed v atically cha	s selected v vhile the /A inges as fo	vhen pov TF signa Ilows.	veristurned I is "Low".	ON or if initia	lization	by the
					[ → (á	a) → (b) –	$\rightarrow$ (c) $\rightarrow$ (d)	) → (e) → (	f) → (g) -	$\rightarrow$ (h) $\rightarrow$ (i) $-$	$\rightarrow (j) \rightarrow (k) \rightarrow (k$	(I)	
	В			(a (b (c (d (e	) 50% c ) 25% c ) Printe ) Partia ) Japan ) Overse	checkered printing (2 lines)(g) International characters (12x24)(14 linescheckered printing (6 lines)(h) Japanese character set (8x16) (1 set)ter setting status printing(i) Ov erseas character set (8x16) (1 set)tial cutting*2(j) International characters (8x16) (14 lines)anese character set (12x24) (1 set)(k) Kanji JIS lev els 1, 2*1 (24x24)							s) B
				(3) li	nterfac orinting	e setting	and expa	nd functio	n setting	are printed	l at printer	setting	status
				(4) T (5) If V (6) T	est prin f an erro Vhen e o dean vhen /A	nting is ex or occurs rror is clea r test prin TF is set f	ecuted with during test ared, printin ting, shut p to "High".	h standard printing, p ng restarts power OFF	paper (P rinting sto after one or exec	D150R equivops (except velice) line feed. cute initialization	valent) mode when paperis tion by the /	satnea INPRM	rend). signal
	С			•	-		J	*1: *2:	Printed Cut only	only when Fla / when cutter	ash Memory diiving circu	is mour it is mo	nted C unted
		1.2	Detection	Functi	on								
			Detectio	on Func	tion				Fund	tion			
	D	Detection Function Paper Run Out Detection				<ol> <li>During printing or feeding paper, a paper run out is detected when the sensor continuously detects a black level for about 7mm.</li> <li>When the printer detects a paper run out during printing, and if currently printing data exists, the printer automatically enters off-line (BUSY) status after printing one line.</li> <li>Set the paper. If an error has not occurred, one line is fed and printing restarts from the next line.</li> <li>When paper run out detection invalid mode is set by the detection function setting command or the /SLCTIN signal, paper run out detected.</li> <li>When paper run out status is detected in paper run out detection valid mode, paper cannot be fed by command, but can be fed by the /ATF signal.</li> </ol>							
TION													ed. n valid e /ATF
DL SEC						<ul> <li>(6) When paper run out is detected, driving of the motor is turned OFF.</li> <li>(7) When the connector for detection is in open status, it is judged as a paper run out.</li> </ul>							paper
DOCUMENT CONTRC	Paper Near End       (1) When the near end detection signal (/NES) becomes about 1.5V or is judged as paper near end. In this status, data receiving and prinexecuted continuously.         (2) When the connector for detection is in open status, it is judged a near end.         (3) When power is turned ON and at initialization, this function is invacan be valid by the detection function setting command.						1.5V or nd printi dged as is invali	less, it ng are paper d, and					
ATE									TI	TLE <b>FTP-6X</b>	8DCL/DSL45	5X SER	IES
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			Detection Function	Function
	A		Platen Open Detection	<ol> <li>When the printer detects platen open during printing, the printer stops driving the head and the motor in one line unit, and the printer automatically enters off-line (BUSY) status.</li> <li>Move the platen dose. If an error has not occurred, one line is fed and printing restarts from the next dot line after that (the home positioning initialization of a cutter when the cutter is mounted, new one-line feeding When the ATR signal are set as "High")etc. At this time printing continuity is not guaranteed.</li> <li>When the platen open detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, platen open is not</li> </ol>
	В		Thermal Head Temperature Abnormality Detection	<ul> <li>detected.</li> <li>(4) When platen status is detected in platen detection valid mode, paper cannot be fed by command, but can be fed by the /ATF signal.</li> <li>(5) When platen open is detected, driving the motor is turned OFF.</li> <li>(1) Temperature is detected by the thermistor inside the thermal head to protect the head from heating.</li> <li>(2) When abnormal temperature (about 70 ) is detected, the printer stands by in busy status until the temperature drops to the specified temperature (about 60 ).</li> <li>(3) When the temperature abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal abnormal</li> </ul>
	С		Voltage Abnormality Detection	<ul> <li>(4) When temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.</li> <li>(5) When the temperature of the thermal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.</li> <li>(1) Printing head drive voltage is detected, when this voltage is abnormality, the printer automatically enters off-line status.</li> </ul>
			Cutter Abnormality Detection	<ul> <li>(2) When power-supply voltage returns within the above-mentioned range and an error has not occurred, the printer immediately returns to normal status.</li> <li>(3) When the voltage abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, abnormal voltage is not detected.</li> <li>(1) When cutting does not end, a Cutter abnormality is detected as a cutter defect, and the printer automatically enters off-line status.</li> <li>(2) The printer returns by turning power on again or by hardware reset</li> </ul>
	D		Thermal Head	<ul> <li>(3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.</li> <li>(4) When a paper cut command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.</li> <li>(1) When abnormal limit critical temperature (about 90) of thermal head is</li> </ul>
DOCUMENT CONTROL SECTION	<b>^</b>		Critical Temperature Abnormality Limit Detection	<ul> <li>(1) when abromating chical temperature (about 90°) of thematine ad ts detected, the printer will be in a Hardware abnomality state.</li> <li>(2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.</li> </ul>
DATE				TITLE FTP-6X8DCL/DSL45X SERIES PRODUCT SPECIFICATION
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	Detection Function			Function			
A	Mark Detection Function	<ul> <li>(1) Mark is detecte</li> <li>(2) The shape of the dimensions.)</li> <li>Mark</li> </ul>	d by the pape the mark is as $ \frac{1}{5} 5 \text{mm} \pm 1 $	follows. (Directly cont	nsor. lact Fujitsu	ı for details on	А
В		<ul> <li>(3) When paper rusensor may be stop the printer cleared, it is jud</li> <li>(4) If a mark is normark undetecter</li> <li>(5) Mark undetecter or until a high p</li> </ul>	n out or hea on the mark. avoiding the ged as pape t detected or d status is re ed status is h riority error o	d down status is dete Feed paper for a maxi e mark position. If pap r run out status and th n the page when mar ported. eld until the next data	cted at ini mum of at per run ou e printer s k detection i (commar	tialization, the bout 7 mm and it status is not tops. n is executed, nd) is received	в
	MCU Operation Abnormality Detection	<ol> <li>The watchdog detects MCU or (2) When watchdog operation is sto</li> <li>If MCU runaway abnormality.</li> </ol>	timer to prev peration abno g is occurred pped. y activates th	vent printer damage c ormality. d, printer goes interna e watchdog timer, it is	aused by al reset st detected	a malfunction ate and MCU as a hardware	

## **1.3 Protective Function**

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DOCUMENT CONTROL SECTION

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Protective Function	Function
Power Supply Disconnection	(1) This function prevents burning of the head caused by the reverse order disconnection of the logic power supply and power supply for the head
Sequence Protection	<ul><li>(2) The head driving power supply is switched by FET, which is controlled by MCL.</li></ul>
	<ul> <li>(3) MCU detects the head power supply voltage at initialization, and stops initialization until these values reach the specified values.</li> </ul>
Motor Protection	(1) Motor excitation is shutdown by a hardware timer to prevent motor
	smoking caused by an operation abnormality.
Hardware Timer	<ul> <li>(2) Motor current is shut OFF about ten seconds after the motor stops.</li> <li>(1) Limit the applied pulse width of the head by a hardware timer to prevent head burning by fixing the logic of the thermal head enable signal.</li> </ul>
Motor Power Save	(1) After the motor operation stops, current flows for one phase to maintain the
FUNCTION	(2) If current is OFF when motor operation starts, current flows in the same
	phase for maximum of 200msec to fix the pulse motor phase before motor operation starts.
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			iace sp	ecification	1							
	2.1	Test Print Fun	ction									
Α		Test (1) Print Function (2)	The se /INPRN The mo	If-test print A signal is ode autom	t function is executed v atically cha	s selected v while the /A anges as fol	/hen pow TF signal lows.	eristumed C is "Low".	ON or if initia	lization	by the	
			$\Gamma \rightarrow$	(a)  ightarrow (b) –	$\rightarrow$ (c) $\rightarrow$ (d)	) → (e) → (	f) → (g) -	ightarrow (h) $ ightarrow$ (i) $ ightarrow$	$(j) \rightarrow (k) \rightarrow (k)$	(I) —		
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			(d) Parti (e) Japa	ial cutting* nese chara	utting* <sup>2</sup> (j) International characters (8x16) (14 lines) e character set (12x24) (1 set) (k) Kanji JIS levels 1, 2 * <sup>1</sup> (24x24)							
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	2.2	Detection Fun	ction				-		C C			
С		Detection Fu	Inction				Func	tion				
		Detection	JT	(1) Durin sense flow selec	ng printing or continue is selecte cted, "DTR"	or feeding ously detec ed, "XOFF' ' signal goe	paper, a ts a blac ' code i es to "ma	a paper run o k level for ab s transmitted rk" state.	out is detection out 7mm. If d. If "DTR/	cted wh f "XON/ DSR" f	en the XOFF" flow is	
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				(3) Set t resta	printing on printing on the paper. rts from th	er detects a sists, the pr e line. If an error e next line.	has not If "XON/	or out duling omatically ent occurred, or XOFF" flow i	ers off-line ( ne line is fea sselected, "	(BUSY) d and p 'XON" (	orinting	
D				<ul> <li>(2) finite</li> <li>printi</li> <li>after</li> <li>(3) Set t</li> <li>resta</li> <li>trans</li> <li>state</li> <li>(4) When</li> </ul>	ng data ex printing on the paper. rts from th mitted. If " n paper run	er detects a ists, the pr e line. If an error e next line. DTR/DSR" n out detec	has not has not If "XON/ flow is s	omatically ent occurred, or XOFF" flow i elected, "DT	t by the dete	(BUSY) d and p 'XON" ( bes to " ection fi	status orinting code is space" unction	
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D		Paper Near E Detection	nd	<ul> <li>(1) Finite after printi after</li> <li>(3) Set for resta transsection state</li> <li>(4) When settir</li> <li>(5) When settir</li> <li>(5) When signation (6) When signation (7) When run construction (1) When signation (1) When signation (2) When setting (3) When settin</li></ul>	ng data ex printing on the paper. rts from th mitted. If " n paper run ng commar n paper run n paper run n paper run n the conn out. n the near dged as pa suted contir n the conn rend. n power is pe valid by	er detects a ists, the pr e line. If an error e next line. DTR/DSR" n out detect n out detects annot be f n out is detects per near er nously. ector for detects turned ON the detects turned ON the detects	a paper i inter auto has not If "XON/ flow is s tion invali LCTIN signal is dete d by co ected, dri etection is on signal nd. In this etection i and at in on functio	or out duffin or out duffin occurred, on XOFF" flow i elected, "DT id mode is set gnal, paper ru- ected in pape ommand, but ving of the ma s in open state (/NES) beco s status, data s in open state itialization, the on setting con	a printing, a pers off-line ( a line is fec s selected, " R" signal go t by the dete un out is not er run out o can be fec otor is turner us, it is judg mes about receiving ar atus, it is jud his function <u>a mand</u> .	(BUSY) d and p "XON" of bes to " ection fit detected detected d OFF. detected d OFF. ded as a 1.5V or nd printi dged as is inval	includy of status printing code is space" unction ed. n valid e /ATF paper less, it ing are is paper id, and <u>IES DN</u> <u>CUST</u>	

Detection Function         Function           Platen open         (1) When the printer deteds platen open during printing, the printer stops driving the head and the motor in one line unit, and the printer submatically enters of Platen (BUSY) status (1 * XONXOFF* flow is selected, XOFF code is transmitted. If "DTROBSET flow is selected, "XOF code is transmitted. If "DTROBSET flow is selected, "XOF code is transmitted. If "DTROBSET flow is selected, "XOF code is transmitted. If "DTROBSET have is selected, "XOF code is transmitted. If "DTROBSET have is selected, "XOF code is transmitted. If "DTROBSET is selected, "XOF code is transmitted. If "DTROBSET is selected, "XOF and generalization of a cutter when the cutter is mounted, new one-line feeding when the ATR signal are stats "High/Floc. At this time printing confinutive is not guaranteed. If "XONXOFF" flow is selected, "XOF and generalized. If "XONXOFF" flow is selected, "XOF code is transmitted. If "DTROBSET is selected, "XOF code is transmitted. If "DTROBSET is selected, "XOF code is transmitted. If "DTROBSET is selected, "XOF code is presenting."           8         Thermal Head         Thermal temperature is detected in platen open is not detected. (TR Signal, Baten open is not detected. (TR Signal, Baten open is not detected.) TR Signal platen open is not detected.)           8         Thermal Head         Themperature is detected by the thermistor inside the head to proper selection flow is selected. (TR Signal, Baten open is not detected.)           9         When the temperature abnormality is detected in the detection selected.         (When the temperature abnormality is detected in the open selection selected.)           9         When the temperature abnomatity is detected in the open selected in thead selected.					1				2				3					4
A     Plate open				Doto	ction Eu	nction					<b>.</b>	notion						
Detection				Plate	en open	neuon	(1)	When the	e print	er detects	plater	n open o	lurina r	orintina t	he printe	er sto	ons	
A         automatically enters off-line (BUSY) status. If "XONXOFF" flow is selected. "DTF" signal goes to "mark state.         C)           C         Move the platen does. If an error has not occurred, one line is fed and printing restarts from the next do line alter is mounted, new one-line teening in that little information of a outer when the cubits is mounted, new one-line teening in the little information of a outer when the cubits is mounted, new one-line teening in the little information of a outer when the cubits is mounted, new one-line teening in the little information of the informating in the informating in the information of the informat				Dete	ction		(•)	driving th	ne he	ad and th	ie mo	otor in o	one lin	ie unit, a	and the	prir	nter	
A       selected: "XOI-P" code is transmitted. If "DI-RDSR" tow is selected, "DTR* signal goes to "mark" state.         B       2       Move the platen dose. If an enror has not occurred, one line is fed and printing restants from the next dot line after that (the home positioning printing restants from the next dot line after that (the home positioning printing restants from the next dot line after that (the home positioning printing restants from the next dot line after that (the home positioning printing restants from the next dot line after that (the home positioning printing restants from the next dot line after that (the home positioning when the ATR signal are set as "High")etc. At this time of printing continuity when the platen open detection invalid mode is set by the detection function setting command, but can be fed by the ATP signal.         B       Thermal Head Temperature Abnormality       (5) When platen open is detected, dhing the motrisite the detection prior the platen open is detected, dhing the motrisite the platen open is pager cannot be fed by command. Luc an be fed by the ATP signal.         C       Thermal Head Temperature Abnormality       (5) When the platen open situation to "by the SLCTIN signal, abnormality detection function setting command or by the SLCTIN signal, abnormality detection usid mode, pager carmot be fed by command.         C       Paper Near End U       (1) When the mearend detection signal (NES) becomes about 15V or less. It is bloged as pager near end. In this situats, data receiving and printing are executed continuously.         D       Other the cutter tables for the detection is invalid, and a datus.       (1) When apper out command is receival in the status. If "XOINVOFF" flow is selected, "XOFF" ood is i								automatic	ally e	enters off-li	ine (l	BUSY) s	tatus.	If "XON	/XOFF"	flow	is	
C     C		А						selected,	"XOF	F" code is	s trans	smitted.	IT "DII	R/DSR" fl	low is se	elect	ed,	А
B         printing restarts from the next dot line after that (the home positioning infinitazion of a outer when the cutter is mounted in , new one-line feeding When the ATR signal are set as "High"etc. At this time printing contruly is not guaranteed. If "CONXPORT" flow is selected, "CON" code is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "space" date.           B         (3) When the platen open detection invalid mode is set by the detection function setting command or by the SLCTIN signal, blaten open is not detected.           B         (1) Thempatter is a detected in platen open detection valid mode, paper cannot be fed by command. Util can be fed by the ATP signal.           B         (1) Thempatter is a detected by the themstool is detected. the printer stands by in busy status until the temperature (about 70) is detected. The printer stands by in busy status until the temperature (about 60) drops to the specified temperature.           C         (2) When the temperature abnormality detection invalid mode is set by the detection wild mode, paper cannot be fed by command.           (2) When the temperature abnormality is detected in temperature abnormality detection wild mode, paper cannot be fed by command.           (2) When the temperature abnormality is detected.           (3) When the temperature of the form head the printer stands to printing are status.           (4) When the temperature abnormality is detected as a cutter detection signal (MES) becomes about 15 Vo riess, it is earend.           (3) When power is turned ON and tinitalization, the status of out result and a ear of head testos for detection signal or by hardware reset proceeding withead thead testos for detection se							(2)	Move the	plate	n dose. If a	anen	e. rorhasn	ot occi	urred, one	e line is f	fed a	and	
c         initialization of a cutter when the cutter is mounted , new one-line feeding When the ATR signal are stat as "lighty"tet. At his time printing oninuity is not guaranted. If "XONXOFF" for vis selected, "DXN" code is stata mainted. If "DRDSR" four is selected, "DXN" code is set by the detection function setting command or by the /SLCTIN signal, platen open is not ducation of by the /SLCTIN signal, platen open is not ducation. The signal platen open is not ducation by the /SLCTIN signal, platen open is not ducation. The setting is the signal platen open is not ducation. The setting is the setting involved in the setting open detection valid mode, page cannot be for by command, but can be fed by the ATF signal.           n         Thermal Head         Therma platen open detection involved mode. Thermal Head         Thermal Head         Therma platen open detection involved mode. Thermal head to common the hearting.           2) When application open is setsected.         Thermal Head         Thermal head to command the temperature (about 70.) is detected. In platen shows and the temperature (about 70.) is detected. In the set to the detection function setting command or by the /SLCTIN signal, abnormal temperature abnormality is detected in the printer shows and an error has not occurred, the printer interdetably returns to normal status and an error has not occurred, the printer networks of the specified temperature abnormality.           c         Paper Near End         11 When the near end detection signal (NES) becomes about 15V or less. It is judged as paper near end. In this status, at is is upded as paper near end. In this status, at is is upded as paper near end.           dutater Abnormality         10 When the connector for detection, his function is invalid, and connection is indeta							(-)	printing re	estarts	from the	next	dot line	after th	at (the h	ome pos	sition	ing	
B         When the AIR signal are set as High refic. At his time printing continuity is not guaranteed. If "XDNXOFF" flow is selected, "XDNY code is transmitted. If "DTRUDSR" flow is selected, "DTR signal goes to "space" sate.           B         (3) When the platen open detection invalid mode is set by the detection function setting command or by the SLCTIN signal, platen open is not detected.           (4) When platen open status is detected in platen open detecton valid mode. port platen open is detected driving the motor istumed OFF.           (5) When abormal temperature (about 70) is detected, the printer stands by in busy status until the temperature (about 70) is detected, the printer stands by in busy status until the temperature (about 70) is detected, the printer stands by in busy status until the temperature (about 60) drops to the specified temperature.           (6) When the temperature abnormality detection invalid mode is set by the detection valid mode, paper cannot be fed by command.           (6) When the temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.           (7) When the temperature of the fermin lead returns to normal temperature is not detection signal (NES) becomes about 15V or less. It is judged as paper near end. In this status, data receiving and printing are executed continuously.           (2) When the curred core for detection is in open status, it is judged as a paper mearent.           (2) When the nearend detection signal (NES) becomes about 15V or less. It is judged as paper near end. In this status, data receiving and printing are executed continuously.           (2) When the curter boromality is detected as a curter detect, and the prin								initializatio	on of a	outter whe	en the	cutteris	mount	ed, new	one-line	feed	ling	
Paper Near End         (1) "DTR/DSR" flow is selected, "DTR" signal goes to "space" signal field. If "DTR/DSR" flow is selected, "DTR" signal goes to "space" signal field open is not detected.           If         (3) When the platen open detection invalid mode is set by the detection.           (4) When platen open is detected, diving the motoris turned OFF.           Thermal Head         (1) Temperature           Thermal Head         (1) Temperature           Abnormality         (2) When abnormal temperature (about 70.) is detected, the printer standard temperature is not detected.           (2) When abnormal temperature (about 70.) is detected, the printer standard temperature is normality is detection invalid mode is set by the detection function setting command or by the SLCTIN signal, abnormal temperature is normality is detected in temperature abnormality is detection invalid mode.           (2) When the temperature abnormality is detected in temperature abnormality is detection invalid mode is set by the detection invalid mode, space rannot be fed by command.           (3) When the temperature abnormality is detected in temperature abnormality is detected in the printer inveside is more able status and a rear has not occurred. The printer strume able status.           (4) When the nearend detection signal (NES) becomes about 1.5V or less, it is judged as paper rand. In this status, data reaving and printing are able status.           (2) When abnormal strue down and a trinitalization. This function is invalid, and can be easily or detection and is received in the state of cutter detect and the printer withoreas abnormality is detected as a cutter detect an the printer withor able s								when the	AIR	signal are s	Setas ∩N/X/	"High")e ∩FF" flo	tc. At tr wiss	nistime pi		ntini	uity	
B       state.       (3) When the platen open detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, platen open is not detected.         (4) When platen open status is detected of inplaten open discoton valid mode, paper cannot be fed by command, but can be deby the /ATF signal.         (5) When platen open is detected of the themistor inside the themmal head to protect the head from hearing.         Abnormality       (2) When abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, abnormality detection invalid mode; set by the detection function setting command or by the /SLCTIN signal, abnormality detection valid mode, paper cannot be fed by command.         (3) When the lemperature abnormality is detected in temperature abnormality detection invalid mode is set by the detection valid mode, paper cannot be fed by command.         (4) When the lemperature is not detected.         (5) When the lemperature abnormality is detected in temperature abnormality detection involid mode is set by the detection function.         (5) When the emperature of the hemmal head returns to printing enable status and an error has not occurred, the printer immediately returns to nomiting are executed continuously.         (2) When the emperature of the thermal head returns to printing enable status and an error has not occurred. The printer immediately returns to nomiting are executed continuously.         (2) When the oper reture of hor detection is in open status, it is judged as paper near end.         (3) When the oper reture of hor detection is invalid. and can be valid by the detected. "Diff agree is not in the home								transmitte	d. If "	DTR/DSR"	flowi	s selecte	ed, "DT	R' signal	qoes to	"spa	ce"	┢
(3) When the platen open detection invalid mode is set by the detection is not detected.     (4) When platen open is detected (driving the motoris turned OFF.     (5) When platen open is detected (driving the motoris turned OFF.     (1) Temperature is observed to the thempiator is observed of the themistor inside the thermal head to protect the head from heating.     (2) When abnormal temperature (about 70 ) is detected. The printer standard (driving the motoris turned OFF.     (3) When the temperature (about 70 ) is detected in the printer standard (driving the motoris turned OFF.     (3) When the temperature (about 70 ) is detected in the printer standard (driving the motoris turned OFF.     (3) When the temperature (about 70 ) is detected in the printer standard (driving the motoris turned OFF)     (3) When the temperature (about 70 ) is detected in the printer standard (driving the motoris drived to the detection invalid mode is set by the detection indiced, paper cannot be fed by command.     (4) When the temperature abnormality is detected in temperature abnormality is detected in temperature abnormality is detected in temperature abnormality is detection valid mode is set by the detection indiced, paper cannot be fed by command.     (5) When the cancer of the thermal head returns to printing enable status and an error has not occurred, the printer simmediately returns to normal status.     (4) When the cancer of detection is in relations and printing are executed continuously.     (2) When the connector for detection is in relation as the "XONXOFF" flow is selected. "XOFF" code is transmitted. If "DirtPDSR" flow is selected. "XOFF" code is transmitted. If "DirtPDSR" flow is selected. "XOFF" code is normality is detected as a cutter up-concerning, will be in a Hardware abnormality state.     (1) When abnormal limit citical temperature limit detecton cannot be invalid by the JSLCTIN signal.     (1) When abnormal limit citical temperature limit detecton cannot be invalid by the JSLCTIN signal.     (2)								state.					,	Ũ	0	•		
B       Interesting command or by the SECTIN Sginal, patient open is mode, paper cannot be fed by command, but can be led by the IAT F signal.         B       Themal Head       (1) Temperature is detected, divincing the motor is turned OFF.         Abnormality       (2) When abnormality detected, divincing the motor is turned OFF.       (2) When abnormality detected by the Itemistion inside the format head to protect the head from heading.         Abnormality       (2) When abnormality detected by the Itemistor inside the format head to protect the head from heading.       (3) When abnormality detection invalid mode is set by the detector function detector.         (3) When the temperature abnormality is detected in temperature abnormality (4) When the measure detection signal (NES) becomes about 15 V or less. It is judged as paper near end. In this status, data receiving and printing are status.         (2) When the connector for detection is in open status. It is judged as paper near end. In this status, data receiving and printing are status.         (3) When the current for detection signal (NES) becomes about 15 V or less. It is judged as paper near end. In this status, add are ceiving and printing are reared.         (4) When abnormality is detected in the morent about sit is judged as paper near end. In this status data section is invalid. and can be walid by the detecton function stimucation remarks the status. If NONXOFF*         (3) When the cutter blade is not in the home postion at initialization, the printer automatically postion tat initialization, the printer automatically postion take							(3)	When the	e plate	en open de	etectic	on invalio	d mode	e is set b	by the d	etect	tion	
B       (4) When platen open status is detected in platen open detection valid mode, paper cannot be fid by domand, but can be fid by the ATF signal.         (5) When platen open is detected, diving the motor is turned OFF.         Themail Head       (1) Temperature is detected by the intermistor inside the thermal head to protect the head from heating.         (2) When abnormal temperature (about 50 ) is detected, the printer stands by in busy status until the temperature (about 50 ) is detected, in wight mode, paper cannot be fed by command.         (3) When the temperature abnormality detection invalid mode is set by the detection invalid mode, paper cannot be fed by command.         (4) When the temperature abnormality detection invalid mode is set by the detection invalid mode, paper cannot be fed by command.         (5) When the temperature of the thermal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.         (6) When the connector for detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection function stitus of the status. If "XDNXDFF" flow is selected, "XOFF" code is transmitted. If "DRDSR" flow is selected, "XOFF" signal goes to mark" state.         (2) The printer returns by turing power on again or by hardware reset processing.         (3) When the outlet by date is not in the home position at initialization, the printer automatically positions the cutter.         (3) When the cutter by adde is not in the home positin at initializatin, the printer automatically								detected	setting	command	orby	/ the /SL	CLIN S	signai, pia	iten opei	n is	not	
B <ul> <li>paper cannot be fed by command, but can be fed by the /ATF signal.</li> <li>(5) When platen open is deletedd, driving the motor is turned OFF.</li> </ul> Thermal Head       (1) Temperature is deteded by the thermistor inside the thermal head to protect the head from heating.         Abnormality       (2) When abnormal temperature (about 70.) is detected, the pinter stands by in busy status until the temperature (about 60.) drops to the specified temperature is not detected.         (3) When the temperature abnormality detection invalid mode is set by the detection valid mode, paper cannot be fed by command.         (4) When temperature abnormality is detected in the memerature abnormality detection valid mode, apper nare not be fed by command.         (5) When the temperature abnormality is detected in the status is the indetection signal (NES) becomes about 1.5 Vor less, it is judged as paper nare not. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is ginal (NES) becomes about 1.5 Vor less, it is judged as paper nare not.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         (3) When power is turned ON and at initialization, the status of the status. If "VONXOFF" for wis selected, "OFF" doed is transmitted. If "DFRDSR" tow is selected, "DFF" signal goes to "mark" state.          (1) When other automatically positions the cutter.         (4) When outgrading does not end.          (2) The printer returns by turning power on again or by hardware reset processing.							(4)	When plat	ten op	en status is	s dete	ected in p	laten o	pen detec	ction valio	d mo	de,	
c         (5) When platen open is detected, driving the motor is turned OFF.           Thermal Head         (1) Temperature is detected by the thermils inside the thermal head to protect the head from heating.           Abnormality         (2) When abnormality detection invalid mode is set by the detection invalid mode is set by the detection invalid mode is set by the detection valid mode, paper cannot be fed by command.           (3) When the temperature abnormality is detected in temperature abnormality detection invalid mode is set by the detection valid mode, paper cannot be fed by command.           (4) When temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.           (5) When the nearend detection signal (NES) becomes about 15V or less, it is judged as paper near end.           (5) When the nearend detection is in open status, it is judged as paper near end.           (3) When the outer out of the detection function setting commanty.           (2) When the context of the detection function setting commanty.           (3) When the catter blade is not in the home position at initialization, the printer automatically enters offline status. If XONXOFF* flow is selected. "OTF* signal goes to "mark" state.           (2) The printer returns by turning power on again or by hardware reset processing.           (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.           (4) When abnormal limit citical temperature limit detection cannot be invalid by the /SLCTIN signal.           (3) When the cutter		В						paper can	not be	e fed by con	nman	d, but ca	n be feo	d by the //	ATF signa	al.	,	В
C       In terminal near to protect the head from heading.         Abnormality       Detection         (2)       When abnormal time parature (about 70.) is detected, the printer stands by in busy status until the temperature (about 60.) drops to the specified temperature.         (3)       When the temperature abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, abnormal temperature is not detected.         (4)       When the temperature abnormality is detected in temperature abnormality detection invalid mode, pager cannot be fed by command.         (5)       When the temperature of the thermal head returns to normal astatus.         (7)       When the competatore of the thermal head returns to normal status.         (8)       When the connected of the printer immediately returns to normal status.         (9)       When the connector for detection signal (NES) becomes about 15.V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2)       When the connector for detection sis open status, it is judged as paper near end.         (3)       When power is turned ON and a timilazion, this function is invalid, and can be valid by the detected.         (1)       When a begre out command is received in the status of cutter detected.         (2)       The printer returns by turning power on again or by hardware reset processing.         (3)       When the cutter blade is not in the home position at initializati				Thor	mal Hoad	1	(5)	When plat	ten op	<u>en is detec</u>	ted, di	riving the	<u>motor</u>	isturned	<u>OFF.</u>		40	
Abnomality       (2)       When abnomal temperature (about 70 ) is detected, the printer stands by in busy status until the temperature (about 60 ) drops to the specified temperature.         (3)       When the temperature abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, abnormal temperature is not detected.         (4)       When temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.         (5)       When the mearature detection signal (NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are excuted continuously.         (2)       When the nearend detection signal (NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2)       When the cutter box for detection is in open status, it is judged as paper near end. In this status.         (2)       When the cutter box for detection is in open status. If "XONXOFF" flow is selected, "XOFF" code is transmited. If "DTRDSR" fow is selected, "DTR signal goes to mark state.         (3)       When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4)       When a paper out command is received in the state.         (5)       When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4)       When a paper out command is received in the state.         (2) <td></td> <td></td> <td></td> <td>Tem</td> <td>perature</td> <td></td> <td>(1)</td> <td>protect the</td> <td>e hear</td> <td>from heati</td> <td>ina ina</td> <td></td> <td>stor ms</td> <td></td> <td>nemair</td> <td>ieau</td> <td>ເບ</td> <td></td>				Tem	perature		(1)	protect the	e hear	from heati	ina ina		stor ms		nemair	ieau	ເບ	
C         betection         by in busy status until the temperature (about 60 ) drops to the specified temperature.           (3)         When the temperature abnormality detection invalid mode is set by the detection function setting command or by the /SLCTIN signal, abnomal temperature is not detected.           (4)         When the temperature abnormality is detected in temperature abnormality is detected in temperature abnormality is detected in temperature abnormality is detected as paper nearenet. In this status, data receiving and printing are secured continuously.           (5)         When the nearend detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.           (2)         When the connector for detection is in open status. It is judged as paper near end. In this status, data receiving and printing are executed continuously.           (2)         When the connector for detection is in open status. It is judged as paper near end. In this status, data receiving and printing are executed continuously.           (2)         When the connector for detection function setting command.           (3)         When outer goes to mark 'state.           (4)         When cuting does not end, a Cutter abnormality is detected as a cutter flow is selected. 'NOFF' doe is transmitted. If "DR/DSR" fow is selected.'DTR' signal goes to 'mark 'state.           (2)         The printer returns by turning power on again or by hardware reset processing.           (3)         When the cutter blade is not in the home position at initialization,				Abno	ormality		(2)	When abr	norma	l temperatu	ire (al	bout 70	) is de	etected, th	ne printer	star	nds	
C       Specified temperature       specified temperature       specified temperature         C       (3) When the temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.         (5) When the temperature of the themal head returns to printing enable status and an error has not occurred, the printer immediately returns to normality detection valid mode, paper cannot be fed by command.         (5) When the temperature of the themal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.         (6) When the connector for detection is in a period to the connector for detection is in open status, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is in open status, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is open status, it is judged as paper near end.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         (3) When the cutter abnormality is detected as a cutter detect, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.         (3) When the cuter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a baperal cut command is received in the state of cutter un connecting, it will be in a Hardware abnormality state. </td <td></td> <td></td> <td></td> <td>Dete</td> <td>ction</td> <td></td> <td></td> <td>by in bu</td> <td>sy sta</td> <td>tus until t</td> <td>he te</td> <td>mperatui</td> <td>e (abo</td> <td>out 60 )</td> <td>) drops</td> <td>to</td> <td>the</td> <td></td>				Dete	ction			by in bu	sy sta	tus until t	he te	mperatui	e (abo	out 60 )	) drops	to	the	
C       (a) When the temperature shormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.         (b) When the temperature of the thermal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.         (c) When the temperature abnormality is detected in temperature abnormality detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuousy.         (2) When the connector for detection is in open status, it is judged as paper near end.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         Cutter Abnormality       (1) When cutting does not end, a Cutter abnormality is detected as a cutter flow is selected, "DTF" odd is transmitted. If "DTR/DSR" flow is selected, "DTF" odd is transmitted. If "DTR/DSR" flow is selected, "DTF" odd is received in the state of cutter uncontacingly positions the cutter.         (2) When a paper out command is received in the state of cutter uncontacingly state.       (1) When abnormality detection function cannot be invalid and detected, the printer will be in a Hardware abnormality state.         (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.       (3) When the cutter blade is not in the home position at initialization, the printer will be in a Hardware abnormality state.         (3) When the cutter blade is not in the printer will be							(3)	specified t	tempe	rature.	norma	ality data	ction in	walid mov	da is sat	by	the	┢
C       temperature is not detected.       is detected in temperature abnomality detection valid mode, paper cannot be fed by command.         (4) When the meperature of the hermal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.         (5) When the near end detection signal (NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed confinuously.         (2) When the connector for detection is in open status, it is judged as paper near end.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         (3) When the cutting does not end, a Cutter abnormality is detected as a cutter detect, and the printer automatically enters off-line status. if "XON/XOFF" fow is selected, "XOFF" ode is transmitted. If "DRVDSR" fow is selected, "COFF" ode is transmitted. If "DRVDSR" fow is selected, "CoFF" ode is not and is received in the state of cutter unconnecting, it will be in a Hardware abnomality state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper cut command is received in the state of cutter unconnecting, it will be in a Hardware abnomality state.       (2) The mainter returns by turning power on again or by hardware reset processing.         (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.       (3) When the cuther blade is not in the home abnomality st							(3)	detection	functi	on setting (	comm	and or b	v the /	SLCTIN S	signal, al	by onor	nal	
c       (4) When temperature abnormality is detected in temperature abnormality detection valid mode, paper cannot be fed by command.         (5) When the temperature of the thermal head returns to printing enable status and an error has not occurred, the printer immediately returns to normal status.         (6) When the nearend detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is in open status, it is judged as paper near end.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         (3) When the cutter does not end, a Cutter abnormality is detected as a cutter detect, and the printer automatically enters off-line status. If "XON/XOFF" flow is selected, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.         (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper out command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (2) Thermal Head       (1) When abnormal limit citical temperature (about 9) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Thermal Head       (1) When abnormal limit citical temperature (about 9) of thermal head is detected.         (4) When the cutter blade is not in the home position cannot be invalid by the //SLCTIN signal.								temperatu	ure is r	not detected	d.		<b>,</b>		, e			
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Paper Near End       (1) When the nearend detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is in open status, it is judged as paper near end.       (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         Cutter Abnormality       (1) When cutting does not end, a Cutter abnormality is detected as a cutter detect, and the printer automatically enters offline status. If "XON/XOFF" flow is selected, "XOFF" code is transmitted. If "ZON/XOFF" flow is selected, "XOFF" code is transmitted. If "ZON/XOFF" flow is selected, "DTR' signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When abnormal is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (2) Themai Head       (1) When abnormal limit critical temperature (about 90) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Themai Head       (2) Themai head ritical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) UPON       DESC         (4) When a paper out command is received in the state.         (2) Themai head is detected, the printer will be in a Hardware abnormality state.         (2) Themai head is detected.       (2) Themai head is detection cannot be invalid by the /SLCTIN signal.         (3) When the cutter blade is not in the home position cannot be invalid by the /SLCTIN s		С					(0)	and an er	rror ha	as not occu	irred,	the printe	erimme	ediately re	etums to	nor	nal	С
Paper Near End       (1) When the near end detection signal (/NES) becomes about 1.5V or less, it is judged as paper near end. In this status, data receiving and printing are executed continuously.         (2) When the connector for detection is in open status, it is judged as paper near end.         (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting dommand.         Cutter Abnormality       (1) When cutting does not end, a Cutter abnormality is detected as a cutter detection "XOFF" oode is transmitted. If "DTR/DSR" flow is selected, "XOFF" oode is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When a paper cut command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (3) When a paper cut command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (1) When abnormal limit cifical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) The rest of the abnormal limit cifical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) When above and limit cifical temperature limit detection cannot be invalid by the /SLCTIN signal.         (4) When a paper out command is received in the state.         (5) Thermal Head         (6) The printer will be in a Hardware abnormality state.         (7) The neabnormal limit cifical temperature limit detection cannot be invali								status.				•		,				
Detection     Is judged as paper hear end. In this status, data receiving and printing are excuted continuously.     (2) When the connector for detection is in open status, it is judged as paper nearend.     (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.     Cutter Abnormality     Detection     (1) When cutting does not end, a Cutter abnormality is detected as a cutter defect, and the printer automatically enters off-line status. If "XON/XOFF"     flow is selected, "XOFF" ode is transmitted. If "DTR/DSR" flow is selected, "TOFR" signal goes to "mark" state.     (2) The printer returns by turning power on again or by hardware reset processing.     (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.     (4) When a paper out command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.     (2) Thermal Head     Critical Temperature     Abnormality Limit     Detection     (1) When abnormal limit critical temperature (about 90) of thermal head is detected, the printer will be in a Hardware abnormality state.     (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.				Pape	er Near Er	nd	(1)	When the	near	end detection	on sig	nal (/NE	S)beco	mes abou	ut 1.5V o	rless	s, it	
Cutter Abnormality     Cutter Abnormality     Detection     Cutter Abnormality     Cutter Abnormality     Detection     Cutter Abnormality     Cutter Abnormality     Detection     Cutter     Detection     Cutter Abnormality     Detection     Cutter     Detection     Detection     Cutter     Detection     Detecticute     Detecticut				Dele	CUON			executed	as pa contin	pernearen uousiv	ia. In t	inis statu	s, data	receiving	and prin	ung	are	┢
Image: Cutter Abnormality       (3) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         Cutter Abnormality       (1) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         Cutter Abnormality       (1) When power is turned ON and at initialization, this function is invalid, and can be valid by the detection function setting command.         Detection       (1) When abnormality is detected as a cutter flow is selected, "XOFF" code is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper cut command is received in the state of cutter unconnecting, it will be in a Hardware abnormality state.       (1) When abnormal limit critical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Thermal Head       (1) When abnormal limit critical temperature limit detection cannot be invalid by the /SLCT IN signal.         Under the printer terms by turning power on again or by hardware the printer will be in a Hardware abnormality state.       (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCT IN signal.         Under term       Darte       Desig       CHECK       Description       Cutter Problect/DSL45X SERIES         PA							(2)	When the	conn	ector for de	etectio	on is in o	pen sta	ntus,itis j	judged a	s pa	per	
D       (3) When power is turned ON and a timutalization, this function is invalid, and can be valid by the detection function setting command.         Cutter Abnormality Detection       (1) When cutting does not end, a Cutter abnormality is detected as a cutter defect, and the printer automatically enters off-line status. If "XONXOFF" flow is selected, "XOFF" ode is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper cut command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.       (1) When abnormal limit citical temperature (about 90) of thermal head is detected, the printer will be in a Hardware abnormality state.         (1) When abnormal limit citical temperature limit detection cannot be invalid by the /SLCTIN signal.       (1) When abnormal limit citical temperature limit detection cannot be invalid by the /SLCTIN signal.         UPOD Head Control       Cutter       Detection       Cutter       Detection cannot be invalid by the /SLCTIN signal.       Cutter         UPOD Head Control       Cutter       Detection       Cutter       Detection cannot be invalid by the /SLCTIN signal.         UPOD Head Control       Cutter       Detection       Cutter       Detection cannot be invalid by the /SLCTIN signal.         UPOD Head Control       Cutter       Detection       Detection ca								nearend.										F
D       Cutter Abnormality       (1) When cutting does not end, a Cutter abnormality is detected as a cutter defect, and the printer automatically enters off-line status. If "XONXOFF" flow is selected, "XOFF" code is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "mark" state.         (2) The printer returns by turning power on again or by hardware reset processing.       (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper cut command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (1) When abnormal limit critical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Thermal Head       (1) When abnormal limit critical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) Wave the cutter blade is not in the borner be invalid by the /SLCTIN signal.         (1) When abnormal limit critical temperature limit detection cannot be invalid by the /SLCTIN signal.         (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) Wave not command to the printer with the cutter for the state of cutter with the state of cutter with the printer with the print							(3)	When pow	weris	turned ON	and a	at initializ	ation, the second	nis tunctio	on is inva	lid, a	and	
Detection <ul> <li>defect, and the printer automatically enters off-line status. If "XON/XOFF" flow is selected, "XOFF" oode is transmitted. If "DTR/DSR" flow is selected, "DTR" signal goes to "mark" state.</li> <li>(2) The printer returns by turning power on again or by hardware reset processing.</li> <li>(3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.</li> <li>(4) When a paper out command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.</li> <li>(1) When abnormal limit critical temperature (about 90) of thermal head is detected, the printer will be in a Hardware abnormality state.</li> <li>(2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.</li> </ul>				Cutte	er Abnorm	nality	(1)	When cut	tina d	oes not en	d. a (	Cutter ab	normali	tv is dete	cted as	a cu	tter	
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D       Selected, DTR signal goes to mark state.         (2) The printer returns by turning power on again or by hardware reset processing.         (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         (4) When a paper out command is received in the state of cutter un-connecting, it will be in a Hardware abnormality state.         (1) When abnormal limit citical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) The printer will be in a Hardware abnormality state.         (3) When abnormal limit citical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) The main head critical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) When the cutter will be in a Hardware abnormality state.         (4) When abnormal limit citical temperature limit detection cannot be invalid by the /SLCTIN signal.         (3) The printer beside CHECK       DESCRIPTION         ESIG       CHECK       APPR         I       I       I         I       I       I								flow is s	electe	d, "XOFF"	code	e is trar	smitted	1. If "DT	R/DSR"	flow	' is	
Image: Construction of the prime of the		D					(2)	Selected,	DIR er ret	signaigoe ums by tu	s to "r rnina	nark sta nower (	te. In adai	in or hy	hardwar	e re	set	D
Image: Construction of the state of cutter blade is not in the home position at initialization, the printer automatically positions the cutter.       (3) When the cutter blade is not in the home position at initialization, the printer automatically positions the cutter.         Thermal Head Critical Temperature Abnomality Limit Detection       (1) When abnomal limit critical temperature (about 90) of thermal head is detected, the printer will be in a Hardware abnomality state.         (2) Thermal head critical temperature Detection       (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.         Image: Construct Detection       TITLE FTP-6X8DCL/DSL45X SERIES PRODUCT SPECIFICATION         PRODUCT SPECIFICATION       PRODUCT SPECIFICATION         Date       DESIG       CHECK         Image: I							(~)	processing	g.	unio by tu	ming	power c	n ugu	in or by	narawai			
Image: Construct of the state of cutter in the state.         Image: Construct in the state of cutter i							(3)	When the	cutte	er blade is	not i	n the ho	me po	sition at i	initializati	on,	the	
Image: Street of the printer of the street of the street of the street of the printer of the street of the printer of the printerof of the printer of the printerof of the printerof of t							(1)	When a	tomati	cally positio	ons the	e cutter.	naivad	in the	state of		ttor	
OUDDUSTION       Thermal Head Critical Temperature Abnormality Limit Detection       (1) When abnormal limit critical temperature (about 90 ) of thermal head is detected, the printer will be in a Hardware abnormality state.         (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.       (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.         Understand       TITLE FTP-6X8DCL/DSL45X SERIES PRODUCT SPECIFICATION         DATE       DESIG         L       DESCRIPTION         HEIT       DATE         DESIG       CHECK         1       DESCRIPTION         1       S2/         1       97-01	z						(+)	un-conne	cting, i	t will be in a	a Haro	dware ab	normali	ity state.		cu		
Critical Temperature Abnormality Limit Detection	ЦО ЦО			Ther	mal Head	l į	(1)	When abr	norma	l limit critica	al tem	perature	(about	90 ) of	thermal	head	dis	┢
Abromitanty Limit Detection  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (2) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (3) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (3) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (3) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (4) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (4) Thermal head critical temperature limit detection cannot be invalid by the /SLCTIN signal.  (	Ш			Critic	alTempe	rature		detected,	the pr	inter will be	in a H	Hardware	abnor	mality stat	te.			
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<b>Detection Function</b>	Function
Voltage Abnormality Detection	(1) Printing head drive voltage is detected, when this voltage is abnormality, the printer automatically enters off-line status.
	(2) When power-supply voltage returns within the above-mentioned range and
	an error has not occurred, the printer immediately returns to normal status.
	(3) When the voltage abnormality detection invalid mode is set by the detection function softing command or by the (SI CTIN signal abnormal
	voltage is not detected.
lark Detection	(1) Mark is detected by the paper run out detection sensor.
unction	(2) The shape of the mark is as follows. (Directly contact Fujitsu for details on dimensions.)
	Mark
	5mm±0.5mm
	(3) When paper run out or head down status is detected at initialization, the
	sensor may be on the mark. Feed paper for a maximum of 8 mm and stop
	the printer avoiding the mark position. If paper run out status is not cleared,
	(4) If a mark is not detected on the page when mark detection is executed.
	mark undetected status is reported.
	(5) Mark undetected status is held until the next data (command) is received
Mollogenster	or until a high priority error occurs.
MCU Operation	<ul> <li>or until a high priority error occurs.</li> <li>(1) The watchdog timer to prevent printer damage caused by a malfunction detects MCL operation abnormality.</li> </ul>
MCU Operation Abnormality Detection	<ul> <li>or until a high priority error occurs.</li> <li>(1) The watchdog timer to prevent printer damage caused by a malfunction detects MCU operation abnormality.</li> <li>(2) If MCU runaway activates the watchdog timer, it is detected as a hardware.</li> </ul>

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## 2.3 Protective Function

D

DOCUMENT CONTROL SECTION

DATE

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	Protective Function	ר Function								
	Power Supply	(1) This function prevents burning of the head caused by the reverse orde								
	Disconnection	disconnection of the logic power supply and power supply for the head.								
	Sequence Protection	1 (2) The head driving power supply is switched by FET, which is controlled by								
		MCU.								
		(3) MCU detects the head power supply voltage at initialization, and stops								
		initialization until these values reach the specified values.								
	Motor Protection	(1) The Rush resistant is mounted to prevent motor smoking caused by an								
		(2) After about 10 sec of motor stop, the motor power supply is cut OFF								
	Hardware Timer	(1) Limit the applied pulse width of the head by a hardware timer to prevent								
		head burning by fixing the logic of the thermal head enable signal								
	Motor Power Save	(1) After the motor operation stops, current flows for one phase to maintain the								
	Function	nhase of the pulse motor This takes about 1seconds								
		(2) If current is OFF when motor operation starts, current flows in the same								
		phase for maximum of 200msec to fix the pulse motor phase before moto								
		operation starts.								
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		PRODUCT SPECIFICATION								
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						Cor	nmanc	ls Sp	ecifi	cation				
	A													A
			Ead	ch comma	and is exp	olained usi	ng the fol	lowing	conve	ntions:				
				[Name]		Command	d name							
				[Functio	n]	Function	ofcomma	Ind						
	В			[Code]		Control co	ode repre [X] <sub>16</sub> [X] <sub>10</sub>	sented Hex <i>a</i> d Decim	in hex lecimal al nota	adecimal o I notation tion	r decimal notati	ion.		В
				[Explana	ation]	Explanati	on of com	nmand	functio	n				
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	Ŀ	DES	<sup>20</sup>									96.6 FDNCA	-4001-1	<u></u>

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		(1) HT				
	А	A [Name] Horizontal tab				A
		[Function] The HT command position.	l moves the printing p	osition to the next horizontal t	tab	
		[Code] [09] <sub>16</sub> [09] <sub>10</sub>			·	 
		[Explanation]				
	В	<sup>B</sup> (1) If the next horizontal tab posi	tion is not set, the HT c	ommand is ignored.		в
		(2) If the next horizontal tab possible shifted to the proper position	sition is outside the pr by adding 1 to the print	inting area, the printing position ing area width.	ı is	
		(3) If an HT command is receive the printing has been newly printing is executed. Then, t the next line.	edwhen the print head shifted by adding 1 to he horizontal tab opera	is located at the position towh the printing area width, buffer- ation is executed from the head	ich full I of	
	С	C (4) The horizontal tab position is	setwith ESC D.			С
		(5) If characters are received w	hen the print head is k	ocated at the position to which t	the	
		printing has been shifted by executed. Then, the print he	adding 1 to the printine ad moves to the leftmo	ng area width, buffer-full printing toolumn on the next line, and t	jis the	L
		received characters are pro received, data is printed and column on the next line.	ocessed. When a lin a line is fed. The prir	e feed command such as LF nt head then moves to the leftm	is ost	
	D	(6) In backward printing, the tab	indicates a position from	m the rightmost column.		D
NOL						
SECI						
NJRO	∧	<b>↑</b>				
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	1	2		3		4			
	(2) LF								
А	[Name] Line fee	d				А			
	[Function] The LF sets the	command prints th next-data receive p	e data alread osition at the	ly contained in the print buf leftmost column on the next	fer, then line.				
_	[Code] [0A] <sub>16</sub> [10] <sub>10</sub>								
	[Explanation]								
В	3 (1) The <i>LF</i> commar next-data receive	nd prints the data al e position at the leftr	ready contai nost column (	ned in the print buffer, then on the next line.	sets the	В			
	(2) In the initial state	, the line spacing is	set to approx	. 1/8 inch.					
	(3) When there is no	data in the print but	fer, only a lin	e feed operation is executed					
С	(4) When different-r character typefa level.	leight character type ces are arranged so	efaces are to that their b	be printed on the same lin ottom ends are aligned at th	e, these ie same	С			
	(5) If line spacing du equal to the char	ring printing/line-fee acter height fæds tf	ding is shorten ne paper.	er than the character height,	a length				
D						D			
	_								
ECTION									
IROLS									
NOTI NOTI						F			
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		(3) FF			I	L		-	
	A	[Name]	Formsfeed (new	v page)					A
		[Function]	The <i>FF</i> comma sets the next-da	and prints th ata receive p	e data alrea	dy contained e leftmost colu	in the print buffer umn on the next pa	; then age.	
		[Code]	[0C] <sub>16</sub> [12] <sub>10</sub>						
		[Explanatio	m]						
	В	(1) The <i>FF</i>	command feeds p	aper by the	specified pa	ge length.			В
		(2) In the ir	nitial state, the pag	e length is s	et to approx.	143 mm. (44	lines).		
		(3) When	cut-sheet printing	is selecte	ed, the <i>FF</i>	command e	executes the foll	owing	
		• When	: n the page length	is set to 0 (p	age length c	ancellation) b	by using ESC C, th	ne paper	
		• Pape	ecteu. er ejection is check	ed using the	e paper-out s	ensor. When	the detection is inv	alid, the	
	С	• The r	maximum paper ej	ection lengt	n is approx. 1	Im. If the pape	er-outstate is not o	detected	С
		(4) When p	aperwith mark is:	selected, the	e <i>FF</i> commai	nd executes t	he following opera	ations:	-
		the	next label.	ine print bui				neau oi	
		• The f	perwith mark is se	elected with	ESC <i>c 1</i> .	y position.			
	D								
	D								D
NO									
SECTI									-
VIROL	٨								
VTCON									F
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			(4)	DC 2		I			1			1		
	А		[Na	ame]	Powerde	own								A
			[Fu	Inction]	When it r	eceives t	his comma	and, the pr	inter swit	ches to pov	ver down mode	€.		
			[Co	ode]	[12] <sub>16</sub> [18] <sub>10</sub>									L
			[Ex (1)	planation When r	ı] eceiving t	his code, <sup>-</sup>	the printer	switches t	to power	down mode	e.			
	В		(2)	lf the pi mode. down m	rinter buffe ff the prin node.	er contain t buffer co	is data, the ontains no	e prints the data, the	e data be printer in	efore switch mmediately	ning to power o switches to p	lown ower		в
			(3)	Whenle	evel of /SL	_CTIN or /	/ATF signa	l become	"low", pov	werdown r	node is cancel	ed.		
			(4)	If this co complet	ode is rece ion of the	eived duri operation	ng printing 1.	, the printe	er switche	es to pov e	r down modeu	ıp on		
	С		(5)	This coo	de is inval	id in bit im	nage print i	mode.						с
														F
	D													D
NOIL														
<b>IROL SEC</b>	•													
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		(5) ESC I	EM + n								
	A	[Name]	Setting the	amoun	t of the fee	eding at auto	omatic paper f	feed			А
		[Function]	The amou	nt of the	feeding a	t automatic	paper feeding	jis set.			
_	_	[Code]	[1B] <sub>16</sub> [′ [27] <sub>10</sub> [2	19] <sub>16</sub> 25] <sub>10</sub>	[n] [n]						
		[Explanati (1) The a	on] Imount of feed	ding is so	et by this o	command.					
	в	(2) The s	et amount of	feeding	is 2xn do	line.					в
		(3) The ra n=0.	ange of n is (	)≤ n ≤ 2	255. The a	utomatic pa	aper feed func	tion becomes i	nvalid for		
_		(6) At the autom	time of pow	er ON c eding.	or reset, th	ie printer is	set the conti	nuous paper m	node with		-
	c	(7) An init	tial value is n	= 80. (Al	bout 20mr	n)					С
_											
	D										D
NOI											
<b>JLSEC</b>											┝
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		1		2			3		4
		(6) ESC R	S						
	A	[Name]	Blackwhitereve	rsedprintings	pecification				- A
		[Function]	The ESC RS cor	nmand specifi	es black-wh	ite reversed pr	inting.		
		[Code]	[1B] <sub>16</sub> [1E] <sub>16</sub> [27] <sub>10</sub> [30] <sub>10</sub>						
		[Explanation	n]						
	в	(1) The <i>E</i> S	SC RS command s	pecifies black	white revers	sed printing.			В
		(2) The ES cancor	SC <i>R</i> S command ntain both normal p	can be specif printed charac	ied in units ters and rev	expressed in erse printed ch	characters. One naracters.	e line	
		(3) The <i>E</i> S	SC RS command c	an be used in	allcharacte	r modes.			
		(4) The <i>E</i> S	SC RS command c	an also be us	ed in bit ima	ge printing.			
		(5) The line	e-spacing area is ı	notappeared i	n reverse fo	rmat.			
	С	(6) When a print im the rev	a printing start com nage is not appear verse mode speci	mmand ( <i>LF</i> or in reverse for fied character	<i>FF</i> ) is rece rmat. This re to the righ	ived in reverse everse suppre ntmost column	e mode, some o ssion continues (in forward pri	of the from inting	С
		mode)	or to the leftmost o	olumn (in bac	kward printi	ng mode).		-	
		(7) The pri format.	int image of the ch	aracters skipp	edwitha <i>H</i> 7	Command is r	not appear in re∖	/erse	
	D								D
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ATE			<u> </u>				P-6X8DCL/DSL	45XSERIE	<u>s</u>
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(7) ESC US         (Rame]       Blackwhite reversed printing cancellation         [Function]       The ESC US command cancels black-white revered printing.         [Code]       [1B] <sub>16</sub> [1F] <sub>16</sub> [27] <sub>10</sub> [31] <sub>10</sub> [Explanation]         (1)       The ESC US command cancels the reverse printing mode.         (2)       The ESC US command does not start character printing.	
A       [Name]       Blackwhite reversed printing cancellation         [Function]       The ESC US command cancels black-white reversed printing.         [Code]       [1B] <sub>16</sub> [27] <sub>10</sub> [31] <sub>10</sub> [Explanation]       (1)         (1)       The ESC US command cancels the reverse printing mode.         (2)       The ESC US command does not start character printing.	
[Function]       The ESC US command cancels black white revered printing.         [Code]       [1B] <sub>16</sub> [27] <sub>10</sub> [31] <sub>10</sub> [Explanation]       (1)         (1)       The ESC US command cancels the reverse printing mode.         (2)       The ESC US command does not start character printing.	— A
[Code]       [1B] <sub>16</sub> [1F] <sub>16</sub> [Explanation]       [1) The ESC US command cancels the reverse printing mode.         (1) The ESC US command does not start character printing.         (2) The ESC US command does not start character printing.	
B       [Explanation]         (1) The ESC US command cancels the reverse printing mode.         (2) The ESC US command does not start character printing.         c	-
в (1) The <i>ESC US</i> command cancels the reverse printing mode. (2) The <i>ESC US</i> command does not start character printing.	
c (2) The ESC US command does not start character printing.	В
c	
	С
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		(8)	ESC ! + r	n							•		
	А	[Na	me] F	Printing mod	e specific	cation							A
		[Fu	nction] T	The ESC ! +	n comma	andsp	ecifies pri	nting moc	le.				
		[Co	de] [ˈ [ź	1B] <sub>16</sub> [21 27] <sub>10</sub> [33	] <sub>16</sub> [n] ] <sub>10</sub> [n]								
		[Ex	planation]										
	В	(1)	The ESC	:/+ncomm	andspeo	cifies pr	rinting mo	de.					в
		(2)	The follo printing n	wing figure node:	shows	the rel	ationship	betw een	the bits o	f parameter	n and		
		b7	b6 b5 1	b4 b3 b2	b1 b	0							
	С					00 00 01 01	)0: 08x16 )1: 12x24  0: 16x16  1: 24x24	⊢dot ANK -dot ANK ⊢dot ANK -dot ANK	icharacter icharacter icharacter icharacter f	typeface typeface typeface ypeface			С
						— Ur	ndefined						╞
						0:	Double	width ca	ncellation				F
						1.	Double						
	D					0: 1:	Double	-height sp -height sp	pecification,				D
						— Ur	ndefined						
<b>NOI</b>													
SECI		(3)	When bo	oth the dou	ole width	and o	louble he	eight are	specified,	characters w	ith the		┝
NTRO	₼	(4)			un chiara	icita iyi	ight char	e princeu.	faces the	character typ	ofacios		
NTCO		(ד)	are arran	iged so that	their bott	omeno	ls are aliq	gned at th	e same lev	el.			Е
CUME													
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DATE								Т	TITLE FTP	P-6X8DCL/DS RODUCT SPE	SL45XSE ECIFICAT	RIES ION	╞
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	(9)	ESC %	+ n	(6	effect only when F	lash Memory or	SRAM moun	ted)
А	1]	Name]	External	registration cha	aracter specificatio	n/cancellation		
	[f	Function]	The ESC	% + n comma	and specifies or car	ncels registered ex	ternal charac	ters.
	[0	Code]	[1B] <sub>16</sub> [2 [27] <sub>10</sub> [3	5] <sub>16</sub> [n] 7] <sub>10</sub> [n]				
	[[	Explanation	]					
В	(	1) The ES registere	C %+n co ed externa	ommand selec al character se	ts an internal char t (user-defined fon	acter set (system- t).	defined font)	or a
	(2	2) The folk characte	owing figu er set to b	ure shows the e selected:	relationship betwe	en the bits of para	ameter n and	I the
_	B7	b6 b5	b4 b3	b2 b1 b0				
С	L				000: Internal charac 001: Registered ext (FROM) 010: Extended char 011: Extended bold 100: Registered ext	eter specification emal character specification face character specific emal character specific	ication cation ication	
					(SRAM) 101~111: Undefined	1		
D	(:	3) One of t the ESC	the follow	ing character	- Undefined sets is selected w	ith the character t	pe selected	with
D	(: No.	3) One of the ESC ESC ! Specificatio	the follow C / comma F on Si	ing character ind: Registered External Character pecification	- Undefined sets is selected w Extended Character Specification	ith the character ty Extended Boldface Character Specification	/peselected	with
D	(; <b>No</b> .	3) One of the ESC ESC ! Specification	the follow comma f on SI K 08 x	ing character ind: Registered External Character pecification	- Undefined sets is selected w Extended Character Specification 08 x 16 extended	ith the character ty Extended Boldface Character Specification 08 x 16 boldface	/peselected	with
D	(; <b>No</b> .	3) One of the ESC ESC ! Specification 08 x 16 AN 12 x 24 AN	the follow comma f on K 08 x K 12 x K 16 x	ing character and: Registered External Character becification 16 registered 24 registered	Undefined Sets is selected w Extended Character Specification 08 x 16 extended 12 x 24 extended 16 x 16 extended	ith the character ty Extended Boldface Character Specification 08 x 16 boldface 12 x 24 boldface	/peselected	with
D	(; <b>No</b> . 1 2 3 4	<ul> <li>3) One of the ESC</li> <li>ESC !</li> <li>Specification</li> <li>08 x 16 AN</li> <li>12 x 24 AN</li> <li>16 x 16 AN</li> <li>24 x 24 AN</li> </ul>	the follow 2 comma 5 comma	ing character and: Registered External Character Decification 16 registered 24 registered 16 registered 24 registered	<ul> <li>Undefined</li> <li>sets is selected w</li> <li>Extended</li> <li>Character</li> <li>Specification</li> <li>08 x 16 extended</li> <li>12 x 24 extended</li> <li>16 x 16 extended</li> <li>24 x 24 extended</li> </ul>	ith the character ty Extended Boldface Character Specification 08 x 16 boldface 12 x 24 boldface Undefined Undefined	/peselected	with
D	(; No. 1 2 3 4	<ul> <li>3) One of the ESC interest in the ESC interest interest in the ESC interest interest in the ESC interest inte</li></ul>	the follow c / comma comma F on Si K 08 x K 12 x K 16 x K 24 x undefined er-printing	ing character ind: Registered External Character Decification 16 registered 24 registered 16 registered 24 registered 24 registered 24 registered 16 registered 24 registered	- Undefined sets is selected w Extended Character Specification 08 x 16 extended 12 x 24 extended 16 x 16 extended 24 x 24 extended haracter code is he corresponding i	ith the character to Extended Boldface Character Specification 08 x 16 boldface 12 x 24 boldface 12 x 24 boldface Undefined Undefined received when ntemal character is	ype selected the regist	w ith ered
D	(; No. 1 2 3 4 (4	<ul> <li>3) One of the ESC interest in the ESC interest interest in the ESC interest in the ESC interest in the ESC interest in the ESC interest i</li></ul>	the follow c / comma f on K 08 x K 12 x K 16 x K 24 x undefined er-printing	ing character ind: Registered External Character Decification 16 registered 24 registered 16 registered 24 registered 24 registered 24 registered 24 registered	- Undefined sets is selected w Extended Character Specification 08 x 16 extended 12 x 24 extended 16 x 16 extended 24 x 24 extended haracter code is he corresponding i	ith the character to Extended Boldface Character Specification 08 x 16 boldface 12 x 24 boldface 12 x 24 boldface Undefined Undefined received when ntemal character is	ype selected to the regist	with ered 45XSERIES
D	(; No. 1 2 3 4 (4	<ul> <li>3) One of the ESC !</li> <li>ESC !</li> <li>Specification</li> <li>08 x 16 AN</li> <li>12 x 24 AN</li> <li>16 x 16 AN</li> <li>24 x 24 AN</li> <li>4) If an the character</li> </ul>	the follow C / comma F on SI K 08 x K 12 x K 16 x K 24 x undefined er-printing	ing character ind: Registered External Character Decification 16 registered 24 registered 16 registered 24 registered 24 registered 24 registered 10 external cl mode is set, t	- Undefined sets is selected w Extended Character Specification 08 x 16 extended 12 x 24 extended 16 x 16 extended 24 x 24 extended haracter code is he corresponding i	ith the character to Extended Boldface Character Specification 08 x 16 boldface 12 x 24 boldface 12 x 24 boldface Undefined Undefined Undefined TITLE FTP-6 PRO	ype selected the registres printed.	with ered

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		(*	10) ES	6C & +	- y + n +	m + x	+ d <sub>1</sub> to d <sub>n</sub>	. (6	effect	onlywhen	Flash M	emory mo	ounted)		
	A		[Name	e]	External r	registrat	ion charact	er definit	ion						А
			[Funct	tion]	The ESC to be reg	C & + y → istered.	+ C <sub>1</sub> +C <sub>2</sub> +)	< + d₁ to	d <sub>n</sub> cor	mmand de	fines ex	ternal cha	racters		
			[Code	]	[1B] <sub>16</sub> [2 [27] <sub>10</sub> [3	6] <sub>16</sub> [y] 8] <sub>10</sub> [y]	$\begin{bmatrix} C_1 \end{bmatrix} \begin{bmatrix} C_2 \end{bmatrix}$ $\begin{bmatrix} C_1 \end{bmatrix} \begin{bmatrix} C_2 \end{bmatrix}$	[x] [d₁] [x] [d₁]	to [o to [o	d <sub>n</sub> ] d <sub>n</sub> ]					
			[Expla	nation]											
	В		(1) T	his ES	Ccomma	nd defir	nes externa	charact	ers to	be registe	red.				В
			(2) Ti cl	he mer hosen.	noryfor E ifyvalue	External outside	registration of the rang	characto e is chos	er spe sen, it	cification b becomes	y value a param	of parame eter error.	tery is		
			(	<b>y Re</b> O 1	gistration e Flash N SR	external M Memory RAM	emory								
	С		(3) Pa	aramet	er x spec	ifies a d	lummy code	e. A NUL	code	must be s	pecified.				С
			(4) Pa	aramet	erdspec	ifies the	e data to be	defined.							
			(5) Pa c <sub>2</sub>	aramet ₂values	erc₁and smustsa	c <sub>2</sub> spectisfy the	cify the area following c	as to be onditions	define ∷[20]₁	d. The va ₅≤c₁≤c₂	lues of p ≤[FF] <sub>16</sub>	arameter	c₁ and		
	D		(8) To eo be	o define qual to t e specif	one cha the c <sub>2</sub> val ied the sa	racter, p ue. To c ame nur	parameter o lefine two o mber of time	$r_1$ and $c_2$ r more c as as the	must haract numb	be specifi ters, the d per of char	ed so tha ata block acters to	at the c <sub>1</sub> v of d <sub>1</sub> to c be define	alue is I <sub>n</sub> must :d.		D
			(9) lf nc	"c <sub>2</sub> < c ot regist	1" is dete tered.	cted, a	parameter	error is a	issum	ed and the	e externa	alcharacte	ers are		
CIION			(10)Th	ne leng	jth of the	e data r	equired to	define	one e	xternal ch	aracter	to be reg	istered		
TROLSE	٨		de ta	epends ble):	on the c	haracte	r type spec	ified with	the <i>l</i>	ESC ! con	nmand (s	see the fol	llowing		
TCON	Ť		Char	acter ty with	/pe specif ESC /	ied	Data le	ength							
MEN				08 x 1	6 ANK		16 by	tes							E
oau				12 x 2 16 x 1	4 ANK 6 ANK		48 by 32 by	tes tes							
				24 x 2	4 ANK		72 by	tes							
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<u>ـــــ</u>										DRW NO	).	JOUT OF L			JST.
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А		d1 d3 d5 d7 d9	MSB		MSB			А
	-	d13 d15						_
В		d17 d19 d21 d23 d25 d25 d27 d29 d31						В
С		d33 d35 d37 d39 d41 d43 d45 d47						с
		un	[12×24] MSB	LSB	MSB	LSB		
D		d1 d3 d5 d7 d9 d11 d13						D
DOCUMENTCONTROL SECTION		d13 d15 d17 d19 d21 d23 d25 d27 d29 d31			6×16]			Е
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1	I	2	1	2	
1		2		5	
(11) ESC * + ı	$m + n_1 + n_2 + d_1$ to	d <sub>n</sub>			
 [Name] E	Bit image printing				
[Function] T	The ESC * + m + $n_1$ +	$n_2 + d_1$ to $d_n$	commandspecif	ies and prints a bit imag	ge.
[Code] [1 [2	1B] <sub>16</sub> [2A] <sub>16</sub> [m] [n 27] <sub>10</sub> [42] <sub>10</sub> [m] [n	₁] [n₂] [d₁] t ₁] [n₂] [d₁] t	o [d <sub>n</sub> ] o [d <sub>n</sub> ]		
[Explanation]					
(1) This ESC	command specifies	and prints a	bit image.		
(2) The relati	onchin botwoon nors	motor m onc	limago print mor	too is oo followo:	
		Number	of print dots		
m	Mode	Vertical direction	Horizontal Direction	Number of dots	
97	Single density	1	16	(n <sub>2</sub> *256+n <sub>1</sub> )*print-w	/idth/
98	Double density	1	8	(n <sub>2</sub> *256+n <sub>1</sub> )* print-w	idth
(4) The follow - When m MSB	vingfigureshowsthe ।=97 LSB	erelationship	between bit imag - When m = 9 MSB	ge data and print data: 8 LSB	
d <sub>1</sub>	$\sim$ $d_n$			$d_2 \sim d_n$	
d <sub>1</sub> d <sub>n+1</sub>	~ d_n ~ d_n*2		d <sub>1</sub> d d <sub>n+1</sub> d	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$	
d <sub>1</sub> d <sub>n+1</sub> (5) Paramete to be prin dots to be	$ar n_1$ and $n_2$ specify th ted. That is, the num	the number of ber of dots is $x n_2 + n_1) x p$	d <sub>1</sub> d <sub>1</sub> d <sub>n+1</sub> dots in the vertic "256 x n <sub>2</sub> + n <sub>1</sub> ." rint-head-width."	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n^2}}$ $\frac{d_{n^2}}{d_{n^2}}$ al direction of the bit im Therefore, the number	age er of
d <sub>1</sub> d <sub>n+1</sub> • (5) Paramete to be prin dots to be (6) The print	$\sim$ $d_n$ $\sim$ $d_{n^*2}$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$	the number of ber of dots is $x n_2 + n_1) x p$	dots in the vertic $a^{-1}$ $a^{-$	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}} \sim \frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$	age er of
d <sub>1</sub> d <sub>n+1</sub> • (5) Paramete to be prin dots to be (6) The print	$\sim$ $d_n$ $\sim$ $d_{n^*2}$ $\sim$ $d_{n^*2}$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$	the number of ber of dots is $x n_2 + n_1) x p$ Prin	dots in the vertice $2^{256} \times n_2 + n_1$ ." with width (bytes)	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}} \sim \frac{d_{n+2}}{d_{n+2}}$ al direction of the bit im Therefore, the number	age er of
d <sub>1</sub> d <sub>n+1</sub> • (5) Parameter to be prin dots to be (6) The print	$\sim$ $d_n$ $\sim$ $d_{n^*2}$ $\sim$ $d_{n^*2}$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$	the number of ber of dots is $x n_2 + n_1) x p$ Prin	dots in the vertice $a^{-1}$ $a^{$	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}} \sim \frac{d_{n+2}}{d_{n+2}}$ al direction of the bit im Therefore, the number	age er of
d <sub>1</sub> d <sub>n+1</sub> (5) Parameter to be prindots to be (6) The print	$\sim$ $d_n$ $\sim$ $d_{n^*2}$ $\sim$ $d_{n^*2}$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$ $\cdot$	ne number of ber of dots is x n <sub>2</sub> + n <sub>1</sub> ) x p	dots in the vertice $2^{2}256 \times n_{2} + n_{1}$ ." with width (bytes) 48 72	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$	age er of
d1           dn+1           •           •           (5) Parameter           to be print           dots to be           (6) The print           1           1           1	$\sim$ $d_n$ $\sim$ $d_{n'2}$ $\cdot$	e number of ber of dots is x n <sub>2</sub> + n <sub>1</sub> ) x p	dots in the vertic $"256 \times n_2 + n_1."$ rint-head-width." at width (bytes) 48 72 TITLE	$\frac{d_2}{d_1} \sim \frac{d_n}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}} \sim \frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$ $\frac{d_{n+2}}{d_{n+2}}$	age er of

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96.6 FDNCA-4001-1

FUJITSU COMPONENT LIMITED

		1	2		3	4	
		(12) ESC 2					
	A	[Name] 1/6-inch lin	epitchsetting				А
		[Function] The ESC 2	commandsetsth	ne single line pitch	to 1/6 inch.		
		[Code] [1B] <sub>16</sub> [3 [27] <sub>10</sub> [5	32] <sub>16</sub> 50] <sub>10</sub>				
		[Explanation]					
	В	(1) The <i>ES</i> C 2 comma	nd sets single line	pitch to 1/6 inch.			в
		(2) When line pitch is s command is invalid	et using the ESC ated.	2 command, the	linespacingsetwith the E	ESC A	
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		1 2	3		4
		(13) ESC 3 + n			
	Α	A [Name] Line pitch setting			A
		[Function] The ESC 3 + n command sets single line pitch.			
		[Code] [1B] <sub>16</sub> [33] <sub>16</sub> [n] 			F
		[Explanation]			
	В	(1) The ESC 3 + $n$ command sets single line pitch to n dot lines.			В
		(2) When line pitch is set using the ESC 3 + n command, the line the ESC A command is invalidated.	e pitch previously s	etwith	
		(3) In line feed with printing, paper is fed by at least the height specified. In line feed without printing, paper is fed only by the	of the character cu he specified line sp	rrently acing.	
		For example, when line spacing of 10 dot lines is specified height is 24 dot lines, paper is fed by 24 dot lines (in line fee	for a character of ed with printing) or	which 10 dot	
	С	lines (in line feed without printing).			с
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		1	2		3		4
		(14) ESC ? + n	(effect	only when f	Flash Memory or SF	ልM mounted)	
	A	[Name] External r	egistration characte	er deletion			- A
		[Function] The ESC with para	? + n command d ameter n	eletes an ext	ernal registration cha	acter specified	
		[Code] [1B] <sub>16</sub>   [27] <sub>10</sub>   [1B] <sub>16</sub>   [27] <sub>10</sub>	[3F] <sub>16</sub> [n] [63] <sub>10</sub> [n] [3F] <sub>16</sub> [0] [m [63] <sub>10</sub> [0] [m	:Flash mem ] :SRAM area ]	ory area character de a character deletion	letion	
	В	[Explanation]					В
		(1) Parameter n spec	ifies the deleted ch	aracter code.			
		(2) the value of paran $[20]_{co} < n < [FE]_{co}$	neter n must satisfy	the following	condition:		
		(3) After deletion, the	corresponding inte	rnal characte	r is printed.		
	C	(4) The code definitio deleted.	n pattern of the cha	aracter type s	pecified with the ESC	C!command is	С
		(5) If an unregistered ESC ?+ <i>n</i> comman	character code is d is ignored.	s specified w	ith the ESC ? + n	command, the	
		(6) When the value of condition: [20] <sub>16</sub> ≤ m ≤ [FF] <sub>16</sub>	parameter n is 0. t	ne value of pa	arameter m must satis	fy the following	
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		(15) ESC @	
		[Name] Printer resetting	
	А	[Function] The ESC @ command initializes the printer.	
		[Code] [1B] <sub>16</sub> [40] <sub>16</sub>	
	_	$[27]_{10}$ $[64]_{10}$	
		[Explanation]	
	В	<ul> <li>(1) The ESC @ command initializes the printer.</li> <li>(2) The ESC @ command prints the data contained in the print buffer, and initializes various setup items.</li> </ul>	
		(3) When the ESC @ command is executed, various setup items are set as follows:	
		1) Print buffer Clear	
	$\square$	2) Line teed plich 2000t line 3) Print character type 12x24 dots half size character	
		4) Double width specification Clear	
		5) Character code setting Japanese characters	
		6) International character setting Japan 7) Mark detection to start point acting About 2 mm	
	С	8) Paper run out detection setting Valid *1	
		9) Platen open detection setting Valid *1	
		10) Temperature abnormality detection setting Valid *1	
		11) Voltage abnormality detection setting Valid *1	
	$\neg$	12) Kanji print mode specification Clear	
		14) Kanii code setting JIS code	
		15) Printing speed setting High speed mode	
		16) Receive code buffer Retained	
	D	17) Horizontal tab setting Every 8 characters	
		18) Black and white reversal printing Clear	
7		20) Near end detection setting Invalid	
Q		21) Feed function Valid	
EC		22) Paper type Continuous forms	
JLS		23) Registered characters Clear	
IRC	٨	24) Page length setting 44 lines, about 143 mm	
g		26) Paper auto-feed amount setting 20mm	
Ĕ		27) Motor off-time setting One excitation time : 0.5 sec	
ME		Excitation holding time : 1sec	
<u></u>		*1: This can be set to invalid by the /SLCTIN signal.	
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		(16) ESC A + n	
	A	[Name] Line spacing setting	A
		[Function] The ESCA + n command sets the line spacing to "n" dot lines.	
		[Code] [1B] <sub>16</sub> [41] <sub>16</sub> [n] [27] <sub>10</sub> [65] <sub>10</sub> [n]	
		[Explanation]	
	В	(1) The ESC $A + n$ command sets the line spacing to "n" dot lines.	в
		(2) Condition $0 \le n \le 255$ must be satisfied. However, when "n + character-height" is 256 dot lines or more, the line spacing is n + character-height - 256.	
		(3) If the ESCA + n command is set two or more times for the same line, the last set line spacing is valid.	
		(4) When line pitch is set with the ESC 3 or ESC 2 command, the line spacing set with	
	С	the ESCA + $n$ is invalidated.	C
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		(17) ESC C + n	
	Α	[Name] Page length setting	ł
		[Function] The ESC C + n command sets the page length to "n" lines.	
		[Code] [1B] <sub>16</sub> [43] <sub>16</sub> [n] [27] <sub>10</sub> [67] <sub>10</sub> [n]	
		[Explanation]	
	В	(1) The ESC $C + n$ command sets the page length to "n" lines.	3
		(2) Condition $0 \le n \le 63$ must be satisfied.	
		(3) When parameter n specifies 0, the page length is reset. If a FF command is received when the cut sheet mode is specified and the page length is reset, the paper is ejected.	
		(4) If the value of parameter n is incorrect, the page length setting is invalidated and the previous page length is validated.	
	C	(5) Even if the line spacing is changed after the page length is set, the page length is not changed.	7)
		<ul> <li>(6) The line pitch is set as follows:</li> <li>When the line spacing is set with ESC A command, the line pitch is set with</li> </ul>	
		<ul> <li>"character-height + line spacing".</li> <li>When the line pitch is set with ESC 2 or ESC 3 command, the line pitch is set with the line pitch to be set.</li> </ul>	_
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		(18) ESC D+d1 to dN+NUL								
	A	[Name] Horizontal tab position setting	A							
		[Function] The ESC D+d1 to dN+NUL command sets the horizontal tab position.								
		[Code] $[1B]_{16} [44]_{16} [d1] \text{ to } [dN] [00]_{16}$ [27] <sub>16</sub> [68] <sub>16</sub> [d1] to [dN] [00] <sub>10</sub>								
		[Explanation]								
	В	(1) Condition 1 d 255 must be satisfied.	В							
		(2) Condition 1 N 32 must be satisfied.								
		(3) The horizontal tab position is set to the position that is "d x ank-character-width" distant from the head of the line in the printing area. When character-width are satisfied to double-width, the horizontal tab position is applied								
		double-character width.								
	C	(4) Even if the characterwidth is changed after the horizontal tab position is set, the set horizontal tab position is not changed.	с							
		(5) When the horizontal tab is set with the ESC D+d1 to dN+NUL command, the horizontal tab position already set is canceled.								
		(6) When horizontal position d=8 is set, executing a <i>HT</i> command moves the next print position to column 9.								
		(7) Up to 32 horizontal tab positions can be set. If more than 32 horizontal tab positions are set, the data at the excessive tab positions is handled as ordinary data.								
7	D	(8) The "d" values must be entered in ascending order, and must end with NUL. If the "dN" value is equal to or smaller than the "dN-1 value, processing this ESC command is terminated when the dN value is received. The subsequent data is handled as ordinary data.	D							
CLIO		(9) All horizontal tab positions can be canceled with the ESC D NUL command.								
NTROL SE	<ul> <li>(a) A more contained positions can be canceled with the ESC D field continuand.</li> <li>(10) When the power to the printer is turned on or the printer is reset, the horizontal tab position set for intervals of 8 characters selected in the initial state.</li> </ul>									
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96.6 FDNCA-4001-1

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		(19) ESC J + n	
	A	[Name] Forward paper feed	A
		[Function] The ESC J + n command feeds paper in the forw ard direction.	
		[Code] [1B] <sub>16</sub> [4A] <sub>16</sub> [n] [27] <sub>10</sub> [74] <sub>10</sub> [n]	
		[Explanation]	
	В	(1) The ESC $J + n$ command feeds paper in the forw and direction by "n" dot lines.	в
		(2) Condition $0 \le n \le 255$ must be satisfied.	
		(3) When there is data in the print buffer, the data in the print buffer is printed after which paper is fed in the forward direction.	
		(4) When parameter n specifies 0, the data contained in the buffer is printed but paper is not fed.	
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		1 2 3 4	
		(20) ESC K + n	
	A	[Name] Backward paper feed	4
		[Function] The ESC K + n command feeds paper in the backward direction.	
		[Code] [1B] <sub>16</sub> [4B] <sub>16</sub> [n] [27] <sub>10</sub> [75] <sub>10</sub> [n]	
		[Explanation]	
	В	(1) The ESC $K + n$ command feeds paper in the backward direction by "n" dot lines. Condition $0 \le n \le 255$ must be satisfied.	3
		(2) When there is data in the print buffer, the data in the print buffer is printed after which paper is fed in the backward direction.	
		(3) When parameter n specifies 0, the data contained in the buffer is printed but paper is not fed.	
	C	(4) If paper back-feed is executed, paper jam may be occurred. If use this command, it is necessary to confirm application with printer.	7
		(5) If paper back-feed executed, the upper part of character is smashed by gear's back rush. When the print is execute after back feeding, feed the paper forwardwith	
		amount more than back-rush, prevents mash of character.	
		(6) When this command is executed, the paper must not come off from the rubber roller.	_
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		(21) E	SC R	+ n						•										
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		[Fund	ction]	The ESC R international c	+ <i>n</i> :harac	com ters.	mar	nd sj	pecif	ies	printi	ng ı	using	g a	spec	ified	set	of		
_		[Cod	e]	[1B] <sub>16</sub> [52] <sub>1</sub> [27] <sub>10</sub> [82] <sub>1</sub>	<sub>Յ</sub> [r շ [r	1] 1]														
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]	В	(1) T F	The <i>E</i> sparame	SC R + n comr eter n) to be prir	nand Ited.	enat	oles	a se	t of	inter	natio	nal (	chara	acter	rs (s	pecifi	ied w	<b>it</b> h		В
		(2)	The rel	ationship betwe	en inte	ernat	iona	alcha	racte	ers a	nd pa	aran	neter	nis	as s	how r	n belo	w.		
_		(3)	n tha ir	vitial state the c	lomes	tic ch	Jora	ctor s	ot a	nd ch	arac	tor c	ot "	bna	n" ar	o sot				
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		(4) 1	f the v	alue of parame	ter n is	s inva	alid,	this	ESC	con	nmar	nd is	inva	alidat	ed. 7	The p	previo	US		
		S	setting	is validated.																
	С	n	+	Code	e <sub>22</sub>	24	10	5R	50	۶D	55	60	7D	70	70	75				C
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	FL		DESIC			DEC	יייזמי)	TION			+								<b>57</b> /	-
	D	ESIG	DESIG	CHECK		DES	CKIP	APPI	2		$\dashv$	F	JUITSL	J COM	PONE	ΝТЦМ	ΠÐ	H H H H T		F
	L		· _						İ							96	6.6 FD	NCA-4	001-1	-

		1 2 3 4
		(22) ESC V + n
	A	[Name] Right rotation 90°
		[Function] The character is rotated right by 90°.
		[Code] [1B] <sub>16</sub> [56] <sub>16</sub> [n] [27] <sub>10</sub> [86] <sub>10</sub> [n]
		[Explanation]
	В	(1) 90° rotation is specified by n and release is set.
		NSet content0Rotation release of 90°1Rotation specification of 90°
		(2) It is effective to all character kind.
		(3) It is invalid concerning the barcode, the image, and the registration image.
	C	(4) A standard print and the rotation print of 90° can exist together in the same line because an automatic changing is not done by this command.
		(5) Character font becomes equal to 270° rotation (90° in left rotation) when 90° rotation is specified at upside-down printing.
		(6) The direction of the expansion must not rotate with the character when you rotate the length double size and the double width character right by 90°.
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OLSEC		
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MENTO		Ε
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DATE		TITLE     FTP-6X8DCL/DSL45XSERIES
<u> </u>		PRODUCT SPECIFICATION       DRW NO.     CUST.
		HAT     DATE     DESIG     CHECK     DESCRIPTION       DESIG     CHECK     APPR     FUITSU COMPONENT LIMITED     SH B / F
		96.6 FDNCA-4001-1

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		1	2			3		4
		(23) ESC X + n + m						
A [Name] Setting of time to turn off motor								А
		[Function] The tumir	ng off time of the m	otor excitatio	n current is se	t		
		[Code] [1B] <sub>16</sub> [58 [27] <sub>10</sub> [88	8] <sub>16</sub> [n] [m] 8] <sub>10</sub> [n] [m]					
		[Explanation]						
	В	(1) This command se done.	ts the time of the	motor until tl	ne down of po	wer and power of	fare	В
		(2) Parameter n sets t	ime from the moto	stop to the	down of powe	in 0.5 seconds.		
		(3) Parameter msets	time from the dow i	n of power to	power off in 0	.5seconds.		
		(4) An effective range 0≤m≤n≤ 255 0≤	of setting is as follo m≤ 20	DWS.				
	С	(5) An initial value is n	n=2, and n=1.					С
		(6) One aspect of the excited.	motor in the curre	nt slightly in	the time betw	een n and m has	bæn	
		(7) When the paramet power off of the mo	er is set in n=255, otor.	the printer da	bes neither the	down of power no	r the	-
	D							D
NOL								
<b>JLSEC</b>								
ONTRO	1							
<b>JENTC</b>	•							Е
DOUN								
E								
DA					DRW NO	-TP-6X8DCL/DSL PRODUCT SPEC	45XSERIES XIFICATION	<b>)</b>
		EDIT DATE DESIG CHECK	DESCRIF	TION		SU COM PONENT LIMIT FT		<u>19</u> /
		DESIG CHECK		APPR		96.6	FDNCA-4001-	F -1

		(24) ESC Y+1+xa+0+n (effect only when Flash memory mounted)
	A	[Name] Kanji DATA check
		[Function] Sum-check for Kanji DATA is executed.
		$ \begin{bmatrix} \text{Code} \end{bmatrix}  \begin{bmatrix} 1B \end{bmatrix}_{16} \begin{bmatrix} 59 \end{bmatrix}_{16} \begin{bmatrix} 01 \end{bmatrix}_{16} \begin{bmatrix} 78 \end{bmatrix}_{16} \begin{bmatrix} 61 \end{bmatrix}_{16} \begin{bmatrix} 00 \end{bmatrix}_{16} \begin{bmatrix} n \end{bmatrix} \\ \begin{bmatrix} 27 \end{bmatrix}_{10} \begin{bmatrix} 89 \end{bmatrix}_{10} \begin{bmatrix} 11 \end{bmatrix}_{10} \begin{bmatrix} 120 \end{bmatrix}_{10} \begin{bmatrix} 97 \end{bmatrix}_{10} \begin{bmatrix} 0 \end{bmatrix}_{10} \begin{bmatrix} n \end{bmatrix} $
		[Explanation]
	В	(1) Sum-check for the Flash ROM mounted a circuit board is executed by this command.
		<ul> <li>(1) The parameter n is sum-check data.</li> <li>{ Chinese Character Type is Minchou: n = [E0]<sub>16</sub> MaruGothic:n=[AD]<sub>16</sub>}</li> </ul>
		(3) If a sum-kanji data of the Flash ROM calculated in printer and the value of the parameter n are different, it is Flash ROM abnormality. And the printer become hardware error. (If auto status transmittance is effective, a status of hardware error is transmitted)
	C	(4) A process time of this command is about 2 seconds.
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CTION		
ROLSE		
ENOD	1	
IMENI		E
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Δ		PRODUCT SPECIFICATION       DRW NO.     CUST.
		EAT     DATE     DESIG     CHECK     DESCRIPTION       DESIG     CHECK     APPR   FUNTSU COMPONENT LIMITED
		96.6 FDNCA-4001-1

		(25) ESC c + 1 + n
	A	[Name] Internal processing setting
		[Function] The ESC c + 1 + n command sets internal processing. [Code] $[1B]_{16} [63]_{16} [31]_{16} [n]$ $[27]_{10} [99]_{10} [49]_{10} [n]$
		[Explanation]
	В	(1) The bits of parameter n specify internal processing as follows:
		00: Continuous forms 01: Paper with mark 10: Cut sheets 11: Continuous forms with auto paper load Function
	C	Undefined C
		0: auto paper load effective 1: auto paper load Invalidity
		0: fixing
	D	Undefined
NOL		(2) A mark is a black bar with a height of 5 mm.
IROL SEC		(3) When the printer is initialized, parameter n is cleared to 0.
DOCUMENTCON		(4) If this ESC command is issued when there is data in the print buffer, the data in the buffer is printed after which the internal processing is set.
DATE		TITLE FTP-6X8DCL/DSL45XSERIES
		PRODUCT SPECIFICATION       DRW NO.     CUST.
		EDIT     DATE     DESIG     CHECK     DESCRIPTION       DESIG     CHECK     APPR   FUNTSU COMPONENT LIMITED
		96.6 FDNCA-4001-1

			1		2			3		4	
		(5)	When th when fo automa	ne specified p rms are inse tically fed wh	paper type is a p rted. When the nen they are set.	aperwith ma specified pa	rk, marks are per type is cu	automatically de at sheets, cut shee	tected ets are		
	A	(6)	If the pa forms a	aper type is o re automatica	changed from "c ally ejected.	ut sheets" to	"other than o	cut sheets," the e	xisting		A
_		(7)	When the forms w	he specified ith auto pape	paper type is co er load are auton	ontinuous for natically fed w	m with auto when they are	paper load, conti ∋set.	nuous		
	в										в
-											
	с										с
	_										
_											
<b></b>	D										D
SECTION											
CONTROL	$\uparrow$										
DOUMENT											Е
DATE DX							TITLE	FTP-6X8DCL/DS	L45XSEF	RES	 
	┥						DRW NO.	PRODUCT SPE	CIFICAT I	ON CUST.	
		EDIT DATE	DESIG	CHECK	DESCRIP	TION	FUJI	TSU COMPONENT LIMIT		62/	F
	Ľ	DESIG		CHECK		АРРК		96.	6 FDNCA-4	001-1	ľ

				1			2					3			2	1
			(26)	ESC d	+ n	1				_						
	A	_	[Na	ame]	n-line fee	ed										A
			[Fu	inction]	The ES	C d + n y "n" line	command s.	d pr	ints the c	lata an	d feeds	s a line	e, then feed	ls the		
			[Co	ode]	[1B] <sub>16</sub> [27] <sub>10</sub>	[64] <sub>16</sub> [100] <sub>10</sub>	[n] [n]									
			[Ex	planation	ו]											
	В		(1)	The ES	℃d+nc	ommand	lfeeds pap	per l	by a line o	counts	pecified	lwith p	arameter n.			В
			(2)	Conditi	on0≤n≤	255 mu	stbesatis	fied								
			(3)	After "n	" lines are	e fed, the	e data rece	ive	position is	ssetat	the left	edge	on the line.			
			(4)	When t which p	here is da baper is fe	ata in the d by "n"	e print buff lines.	fer, t	the data o	contain	ed in th	ne buff	er is printed	lafter		
	С															С
		•														Γ
	D															D
<b></b>																
ECTION																
TROLS	٨															
TCON	Ϊ															
UMEN																E
DOC																
DATE										Т	ITLE	FTP-6	X8DCL/DSL	45XSE	RIES	┢
لن										D	ORW NO.	rKU	JUGI SPEC	JII-IUAT	CUST.	
		EDIT DESIG	ATE	DESIG	CHECK	ζ	DESCR		ON APPR		FUJ	TSU COM	PONENTLIMITE	D	SH 63	F
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		(27) ESC e + n	
	A	[Name] Backward n-line feed	4
		[Function] The ESC e + n command prints the data and feeds a line, then feeds the paper in the backward direction by "n" lines.	
		[Code] [1B] <sub>16</sub> [65] <sub>16</sub> [n] [27] <sub>10</sub> [101] <sub>10</sub> [n]	
		[Explanation]	
	В	(1) The ESC e + n command feeds paper in the backward direction by the line count specified with parameter n.	3
		(2) Condition $0 \le n \le 255$ must be satisfied.	
		(3) After "n" lines are fed, the data receive position is set at the left edge on the line.	
		(4) When the value of parameter n is 0, the data contained in the buffer is printed but the paper is not fed.	
	C	(5) If paper back-feed is executed, paper jam may be occurred. If use this command, it is necessary to confirm application with printer.	7)
		(6) If paper back-feed executed, the upper part of character is smashed by gear's back-rush. When the print is execute after back-feeding, feed the paper forwardwith	
		amount more than back-rush, prevents mash of character.	
		(7) When this command is executed, the paper must not come off from the rubber roller.	
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DAT		TITLE     FTP-6X8DCL/DSL45XSERIES       PRODUCT     SPECIFICATION	
		DRW NO.     CUST.	
		DESIG CHECK DESCRIPTION FUITSU COMPONENT UMITED H 64/	7

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		1	2		3		4
		(28) ESC s + n					
	A	[Name] Printing	speed setting				А
		[Function] The ES	Cs+ncommandse	etsprintingsp	eed.		
		[Code] [1B] <sub>16</sub> [27] <sub>10</sub>	[73] <sub>16</sub> [n] [115] <sub>10</sub> [n]				
		[Explanation]					
	В	(1) The ESC $s + nc$	command sets printir	ngspæd.			в
		(2) When there is a after which the p	lata in the print buffe printing speed is set.	er, the data c	ontained in the print buffer	is printed	
		(3) When the same command, no c	printing speed as th hange occurs.	e current prir	ntingspæd is specifiedwith	this ESC	
	С	(4) The relations hip <u>n</u> F <u>[60]<sub>16</sub> H [61]<sub>16</sub> N <u>[62]<sub>16</sub> N</u></u>	between parameter unction mode igh-speed printing m ledium-speed printin ledium-speed printin	n and the sp ode g mode g mode	ecified printing speed is as t	ollows:	С
		[63] <sub>16</sub> L [64] <sub>16</sub> F	ow-speed printing m xed 6 division printir xed 9 division printir	ode 1g mode (FTF 1g mode (FTF	P-628MCL series) P-638MCL series)		
	D	<ul><li>(5) If a parameter v</li><li>invalidated. The</li><li>(6) An initial value is</li></ul>	alue not listed in the previous printing sp s n=[60] <sub>16</sub>	above table eed is validat	is set, the new ly set printing ed.	speed is	D
CTION							
INTCONTROL SE	1						Е
E DOCUME							
DAT					TITLE FTP-6X8DCL/ PRODUCT S DRW NO.	DSL45XSERIES	JST.
		HIT DATE DESIG CHECK DESIG CHECK	DESCRII	PTION APPR	FUJITSU COMPONENT L		F
	I					96.6 FDNCA-4001-1	<b>-</b>

	-	1 2 3	4						
		(29) ESC t + n							
	A	[Name] Character code table selection	A						
		[Function] The ESC t + n command selects page n from the character code table.							
		[Code] [1B] <sub>16</sub> [74] <sub>16</sub> [n] [27] <sub>10</sub> [116] <sub>10</sub> [n]	╞						
		[Explanation]							
	В	(1) The ESC $t + n$ command selects page n from the character code table.							
		(2) The bits of parameter n specify the following information:							
		b7 b6 b5 b4 b3 b2 b1 b0							
		0: National character setting							
		1: Overseas character setting							
	С	Undefined	С						
		(3) The ESC $t + n$ command has the same effect as that acquired by specifying [41] <sub>16</sub> or [42] in the parameter of the ESC B command. Therefore when both the ESC $t + n$							
		command and the ESC R command are specified, the last of these ESC commands specified is validated	$\vdash$						
		(4) The initial value of parameter n is 0.							
	D	(5) See Section H, "List of Character Codes."	D						
NOIT									
OLSEC			$\left  \right $						
DNTR	1								
<b>JENTC</b>			Е						
DOCUN									
IE I									
IAI		TITLE FTP-6X8DCL/DSL45XSERIES PRODUCT SPECIFICATION	_						
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		DESIG CHECK APPR 6.6 FDNCA-4001-1	F						

		1 2 3 4
		(30) ESC { + n
	A	[Name] Upside-down printing setting/cancellation A
		[Function] The ESC { + n command sets or cancels upside-down printing.
		[Code] [1B] <sub>16</sub> [7B] <sub>16</sub> [n] [27] <sub>10</sub> [123] <sub>10</sub> [n]
		[Explanation]
	В	(1) Parameter n sets or cancels upside-down printing.
		(2) The bits of parameter n specify the following information:
		b7 b6 b5 b4 b3 b2 b1 b0 0: Upside-down printing cancellation
		1: Upside-down printing setting
	C	Undefined c
		(3) The ESC { + n command can be used in all character modes.
		(4) The ESC { +n command can also be used in bit image printing.
		(5) The character base line is at the bottom of the character typeface. Print character typefaces are arranged so that their bottom ends are aligned at the same level.
	D	D
z		
ECTIO		
IROL S		
<b>L</b> CON	1	
JMEN		E
DOC		
ATE		TITLE FTP-6X8DCL/DSL45XSERIFS
Ĩ		PRODUCT SPECIFICATION       DRW NO.
		EDT     DATE     DESIG     CHECK     DESCRIPTION     FUITSU COMPONENT LIMITED     # 67/F
		96.6 FDNCA-4001-1

		(31) FS ! + n (effect only when Flash Memory mounted)	
	A	[Name] Kanji printing mode collective specification	L
		[Function] The FS ! + n command specifies kanji printing modes collectively. [Code] [1C] <sub>16</sub> [21] <sub>16</sub> [n] [28] <sub>40</sub> [33] <sub>40</sub> [n]	
		[Explanation]	
	В	(1) The bits of parameter n specify the following information:	;
		Undefined 0: Double-width printing cancellation	
	С	0: Double-height printing cancellation 1: Double-height printing setting Undefined	
		(2) When both the double-width printing and double-height printing are specified, double height and width printing is executed.	_
	D	(3) When one line contains character typefaces with different heights, the character typefaces are arranged so that their base line or bottom ends are aligned at the same level.	
	D	(4) When a character typeface is to be extended horizontally, the left edge of the character typeface is fixed and the right edge is extended to the right.	,
<b>JLSECTION</b>		(5) When printing mode is specified with this command and other commands, only the command processed last is validated. For example, the printing mode set with the FS W command is invalidated by the FS ! + n command.	
JUMENTCONTR	1	(6) This command is valid when the Flash ROM is mounted.	3
EDOC EDOC			
DAT		TITLE     FTP-6X8DCL/DSL45XSERIES       PRODUCT SPECIFICATION	
		HUIT     DATE     DESIG     CHECK     DESCRIPTION     FUITSU COMPONENT LIMITED     SH 68 / E / F       DESIG     CHECK     APPR     FUITSU COMPONENT LIMITED     SH 68 / E / F	7
		96.6 FDNCA-4001-1	

		Ļ								
	(32) FS & (effect only when Flash Memory mounted)									
А	[Name] Kanji printing mode specification									
	[Function] The FS & command specifies kanji printing mode.									
_	[Code] [1C] <sub>16</sub> [26] <sub>16</sub> [28] <sub>10</sub> [38] <sub>10</sub>									
	[Explanation]									
В	(1) The FS & command specifies kanji printing mode.	В								
	(2) A kanji character must be represented with a 2-byte code conforming to JIS C6226- <sub>1983</sub> . The first byte then the second byte must be sent.									
	(3) The size of each kanji typeface must be 16x 16 dots or 24x 24 dots.									
	(4) As for the size on the kanji typeface, the font size specified by the ESC ! command is applied. When 8x16 dots is set the size of kanji typeface is 16x16 dots, when 12x24 dots is set, the size of kanji typeface is 24x24 dots.									
С	(5) The size of a character typeface must be selected with a printing mode setting command (FS ! and ESC !). (For details, see "Printing Mode Setting Commands.")	С								
	(6) Even if an undefined character code is specified for printing, a character may be printed.									
	(7) This command is valid when Flash Memory is mounted.									
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OLSEC										
AINO A										
JENTC		Е								
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E										
DA	TITLE     FIP-6X8DCL/DSL45XSERIES       PRODUCT SPECIFICATION       DRW NO.									
	EUT DATE DESIG CHECK DESCRIPTION FUITSU COMPONENT LIMITED & 69/	F								
	DESIG         CHECK         APPR         F         /           96.6 FDNCA-4001-1         96.6 FDNCA-4001-1         96.6 FDNCA-4001-1         96.6 FDNCA-4001-1	F								

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		1		2		3		4	1
		(33) FS	$S^* + m + n_1 + n_2$	+ d <sub>1</sub> to d <sub>N</sub>					
						(effect only when SRAM m	ounted)		
	Α	[Name	e] Bit image pri	inting					A
		[Funct	tion] This comma	nd specifies the	high-speed co	ollective image printing.			
		[Codo				4 1			
			[28] <sub>10</sub> [42]	<sub>16</sub> [11] [11] [1 <sub>10</sub> [ <b>m</b> ] [n <sub>1</sub> ] [r	$n_{2}$ [d <sub>1</sub> ] to [d <sub>1</sub> ] to [d <sub>1</sub> ] [d <sub>1</sub> ] to [d <sub>1</sub> ]	d <sup>N</sup> ]			┝
		[Expla	anation1						
		(1) m	specifies the ope	eration mode.					
	В	m	Operation		Cantic	n			в
		07		The image	data of SRAM	1 is printed in the n1 +			
		97		n2 * 256 do	ot-line.	, no * 256 dat line in			
		98	Download	registered					
		99	99 Print/dow nbad The image data of the n1 + n2 * 256 dot-line is registered to and is printed						
		<u> </u>	<u> </u>	Теуыстей	.0 and 6 print	<del>.</del>			
	G	(2) Th	e number of print line	es is specified wit	h n1+n2x256.				
	С	(3) Th	e number of maximu	um lines is as follo	wsforSRAM	(64KB) equipped with this bo	oard.		C
			Printer	Printwidth		Number of maximum lines			
			FTP-628MCL	48 byte	•	2643 line	,		
			FTP-638MCL	72 byte		1761 line			┢
		(4) T	he quantity of imag	e data is (n1+n2	x256)x printv	vidth.			
		(5) Wi	ith this command th	ne character data	a registered in	to SRAM is overwritten and	hreaks		
	D								C
NOL									
NHC									┝
ROL									
INQ	1								
INIC									Е
B									
ы									L
DAT						TITLE FTP-6X8DCL/L PRODUCT SI	DSL45XSERI PECIFICATIC	ES N	
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		(34) FS .	2	l l l	vhen Flash M	emory mount	ed)	4
	A	[Name] Kanji printing mode	cancella	tion				А
		[Function] The FS .command	cancels	kanji printing mod	le.			
		[Code] [1C] <sub>16</sub> [2E] <sub>16</sub> [28] <sub>10</sub> [46] <sub>10</sub>						-
		[Explanation]						
	В	(1) The FS command cancels A	kanji print	ing mode.				В
		(2) This command is valid when	n Flash M	lemory is mounte	d.			
	С							С
		-						
		-						
	D							D
NO								
SECTI								$\vdash$
NTRO	↑							
ENTOC	I							Е
DOUM								
E D								
DAT					TITLE FTP-6 PRO	X8DCL/DSL4 DUCT SPECI	5XSERIES FICATION	
		EDT DATE DESIG CHECK	DESCRIF	PTION				<u>,                                     </u>
		DESIG CHECK		APPR		PUNEN I LIVIII ED 96 6 FT	$\frac{\frac{E}{E}}{ONCA-4001-1}$	F
						50.011		

		1	2		3		4
		(35) FS 9 + n					
	Α	[Name] Detection	n function enable/di	sablesetting			А
		[Function] The FS	) + n command ena	bles or disab	les various detection functions		
		[Code] [1C] <sub>16</sub> [28] <sub>10</sub>	[39] <sub>16</sub> [n] [57] <sub>10</sub> [n]				-
		[Explanation]					
	В	(1) Condition 0≤n≤	255 must be satisfi	ed.			В
		(2) The bits of paran	neter nspecify the fo	ollowing infor	mation:		
		b7 b6 b5 b4	b3 b2 b1 b0				
			ŢŢŢŢŢŢ	0: Feed key	y invalid		
				1: Feed Key	v valid error detection invalid		
	С			1: Thermal	error detection valid		С
				0: Voltage ( 1: Voltage (	error detection invalid error detection valid		
				0: Platen o 1: Platen o	pen detection invalid pen detection valid		
				1:Fixed			
				0: Paper ne	ear-end detection invalid		
	D			1: Paper ne 0: Paper-or	ear-end detection valid ut detection invalid		D
NO				1: Paper-oi 1:Fixed	ut detection valid		
SECTI		(3) In the initial state	all of the detection	functions oth	or than the namer near and de	ection	
VIROL	٨	function are valid			ia mantrie paper near-end de	COLOT	
NTCON							F
UME							
DOC							
DATE					TITLE FTP-6X8DCL/DS	L45XSERIE	ES
					DRW NO.		CUST.
		HIT DATE DESIG CHECK DESIG CHECK	DESCRIE	APPR			<sup>72</sup> / <sub>F</sub>
					96.	6 FDNCA-400	)1-1
		(36) FS C + n (effect only when Flash ROM mounted)					
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	A	[Name] Kanji code system selection	L				
		[Function] The FS C + n command selects kanji code system.					
		$\begin{bmatrix} 28 \end{bmatrix}_{10} \begin{bmatrix} 67 \end{bmatrix}_{10} \begin{bmatrix} n \end{bmatrix}$	_				
		[Explanation]					
	В	(1) Parameter n specifies the kanji code system as follows:         n       Selected system         0.48       JIS code system         1,49       Shift JIS code system	;				
		<ul> <li>(2) In each kanji code system, the following code values are valid:</li> <li>JIS code system</li> </ul>					
		Byte 1: [21] <sub>16</sub> to [7E] <sub>16</sub> Byte 2: [21] <sub>16</sub> to [7E] <sub>16</sub>					
	C	- Shift JIS code system Byte 1: [81] <sub>16</sub> to [9F] <sub>16</sub> and [E0] <sub>16</sub> to [EF] <sub>16</sub> Byte 2: [40] <sub>16</sub> to [7E] <sub>16</sub> and [80] <sub>16</sub> to [FC] <sub>16</sub>					
		(3) The initial value of parameter n is 0.					
		(4) Even if a code value outside the permitted range is specified, the character of a font may print.	_				
	D	(5) When the code outside the range is specified when the shift JIS code system is specified, ANK character which corresponds to code is printed.					
	D	(6) This command is valid when Flash Memory is mounted.	)				
NOIT							
SOL SEC			—				
TOONTE	1						
DOCUMENT		E	*				
TE							
DA		TITLE     FIP-6X8DCL/DSL45XSERIES       PRODUCT SPECIFICATION       DRW NO.					
		HIT     DATE     DESIG     CHECK     DESCRIPTION       DESIG     CHECK     APPR     FUITSU COMPONENT LMITED     Fuitsu component LMITED	;				
		96.6 FDNCA-4001-1					

L

		1	2		3		4
		(37) FS E + n					
	A	[Name] Applied ener	gy adjustment				A
		[Function] Impressed e	nergy is correcte	ed			
		[Code] [1C] <sub>16</sub> [45 [28] <sub>10</sub> [69	] <sub>16</sub> [n] ] <sub>10</sub> [n]				
		[Explanation]					
	В	(1) The correction value $0 \le n \le 255$	issetbyn.The	range of n is sh	own below.		в
		(2) Applierd energy grow	s by the value o	f n large.			
		(3) Please note that the There is danger tow	life of the head	l shortens whe disconnected fo	n the applied energy is too or n ≥ 128.	) large.	
		(4) An initial value is n =	TBD.				
	С						С
		-					
	D						D
<b></b>		-					
NOI							
JL SEC							$\vdash$
ONTRO	↑						
ENTQ	I						Е
oaum							
Ð		-					
DATI					TITLE FTP-6X8DCL/DS PRODUCT SPI	SL45XSERIES ECIFICATION	
					DRW NO.	CUST.	
		EDIT DATE DESIG CHECK DESIG CHECK	DESCRIP	TION APPR		$ED \qquad \begin{vmatrix} S \\ H \\ E \\ E \\ T \end{vmatrix} = 74 / 12$	F
			<u> </u>		96	6 FDNCA-4001-1	

				I			I		I				
		(38	<sup>1</sup> 8) FS r + n	I	2	l		3 enserial interface s		4			
	A	[	Name] Pa	rameter trai	nsmission	(cite				A	١.		
			Function] A Code] [1C]	specified p 16 [72] <sub>16</sub> [n]	arameter replie	s when the	serial coi	mmunications mod	e is select	.ed.			
	В	<ul> <li>[Explanation]</li> <li>(1) This command is effective only serial communications.</li> <li>(2) The reply parameter is specified by n.</li> <li>(3) An initial value is n=0.</li> <li>(4) The range of n is 0 n 255.</li> <li>(5) The parameter is transmitted when this command is received. The reply data follows the format of the automatic status transmission and replies parameter n as status in the fourth byte. The first byte The second byte The third byte The fourth byte</li> </ul>											
			Printer infor	mation Er	ror information	Paper info	rmation	Parameter	]	-	_		
	С	(	6) When the reaches the 7) It can be c	parameter re value of a s onfirmed tha	ply is done by th pecified paramet t the ending of pr	is command, er. int by this com	the autom mmand.	natic status transmiss	sion alw ays	c	2		
			n line	first pa	ige first	page	ine tai	ISTINSSION UALA		-			
			FS r+"1	a data	data	print	→ sta	tus+"1" transmissio	n	F	_		
	D		print data FS r+"2"	a data	data data head up open)/he	print print print print print print print print print print	▶ (st	atus: head up (plate	en open))	D	)		
CTION			 •		r secon data	n d page print	▶ (st	tatus:head-down(p	laten close	;))			
NTROL SE	↑			I	third data	page print	<b>→</b> sta	atus+"2" transmissio	n		-		
OCUMENTCC	I		n line print data FS r+"8'	eighth a data	page eight	n page	eta	itue +"8" transmissio	'n	E	ļ		
<u>Г</u> [т]					data	print			n I				
DATI							DRW	E FTP-6X8DCL/E PRODUCT SF NO.	DSL45XSEI PECIFICAT	RIES ION CUST.	-		
		EDIT DATE DESIG	DESIG	CHECK CHECK	DESCRIP	PTION APPR				F	7		
								9	6.6 FDNCA-4	4001-1			

		1		2		3		4	
		(39) FS	3 W + n		(effec	t only when Flash N	lemory mounte	d)	
	A	[Name	e] Kanji dou	ble height and widt	h printing spe	ecification/cancellati	on	<u>.</u>	A
		[Funct	tion] The FS printing.	W + n command s	pecifies or c	ancels kanji double	height and wid	th	
		[Code	[1C] <sub>16</sub> [28] <sub>10</sub>	[57] <sub>16</sub> [n] [87] <sub>10</sub> [n]					
		[Expla	anation]						
	В	(1) Ti	he bits of param	eternspecify the fo	blow ing infor	mation:			В
		b.	7 b6 b5 b4	b3 b2 b1 b0					
		Ļ			0: Doul	ble height and width	cancellation		
					1: Doul	ble height and width	specification		
	С				- Undefine	d			С
		(2) Ti w	he double heigh ridth and double	t and width size is height are specified	the same as I simultaneo	that acquired when usly.	) both the doub	le	
		(3) W	/hen the double ubsequent chara	height and width icters are printed at	mode is can ; ordinary siz	celed with the FS I	V + n comman	d,	
		(4) W	, /hen different-he	eight character type	efaces are to	be printed on the	same line, the	eir	
	D	(5) W	/hen a character	typeface is to be earling the right edge is	xtended hori	zontally, the left edge	e of the charact	er	D
ON		(6) TI	he double heigh	t and width mode	can also be	specified with the F	-S / command t	₩	
ROL SECTI		si co m	pecifying both the ommand execution	ne double width an ed last is validated d with an <i>FS</i> ! cor	d double he d. Therefore, mmand after	ight simultaneously. when the double which the double	However, on height and wid height and wid	ly th th	
LNOD	1	m Ca	node is canceled anceled.	with an $FSW + n$	command, t	he setting with the <i>i</i>	FS ! command	is	
OCUMENT		(7) TI	his command is	validwhen Flash M	lemory is mo	unted.			Е
آم ۲۱									
DAT						TITLE FTP-6	X8DCL/DSL45> DUCT SPECIFI	KSERIES CATION	
			DESIG CHECK	DESCRIE	PTION	DRW NO.		CUST.	
		DESIG	CHECK		APPR		PONEN I LIMITED 96.6 FDN	$\frac{\left  \frac{E}{E} \right ^{2}}{VCA-4001-1}$	F

			4
		(40) GS & + m + x + y <sub>1</sub> + y <sub>2</sub> + d <sub>1</sub> to d <sub>N</sub> (effect only when Flash Memory mounted)	]
	A	[Name] Registered bit image definition	А
		[Function] This command defines a registered bit image which has the number of dots specified by x and y.	
		[Code] [1D] $_{16}$ [26] $_{16}$ [m] [x] [y <sub>1</sub> ] [y <sub>2</sub> ] [d <sub>1</sub> ] to [d <sub>N</sub> ] N=X x (Y <sub>1</sub> +Y <sub>2</sub> x256) x 8 [29] $_{10}$ [42] $_{10}$ [m] [x] [y <sub>1</sub> ] [y <sub>2</sub> ] [d <sub>1</sub> ] to [d <sub>N</sub> ]	
	р	[Explanation]	
	D	(1) Parameter m specifies the identification number of the registered image. An effective range of m is 1 m 255. When two or more images are registered, the image is distinguished with this ID.	Б
		(2) X indicates the number of bytes in the horizontal direction, and Y(Y1+Y2x256) indicates the same in the vertical direction.	
		(3) d indicates the bit image data.	
	C	(4) When the number of data is 0, if specified ID has already been registered, that data is deleted. if not, nothing is done.	С
		(5) Header is automatically added to the image data and it is registered. Header is composed of 6 by tes and controls the identification number and the size etc. of the image data.	
		. (6) Registered bit images are not deleted, even if power is shut off.	F
	D	(7) When the image is registered by GS * command, ID=1 is automatically selected. Therefore, when other data is written in ID=1 by this command, the content registered by GS * command is destroyed.	D
NOIL		(8) The capacity of the image data is 128KB. Please note that the data that exceeds this capacity cannot be registered.	
OL SEC			
CONTRO	1		
UMENT			Е
DOC			
DATE		TITLE     FTP-6X8DCL/DSL45XSERIES       PRODUCT SPECIFICATION	
		DRW NO. CUST.	
		PEAR     DESIG     CHECK     DESCRIPTION     FUITSU COMPONENT LMITED     N       DESIG     CHECK     APPR     FUITSU COMPONENT LMITED     N	F
		96.6 FDNCA-4001-1	

		1		2		3			4	1
		(41) GS ' +	m +n		(effect	t only when Fla	ash ROM mo	unted)		
	А	[Name]	Registered bit ir	nage printing	(chool				_	A
		[Function]	This command	prints defined	registered bit ima	age data in mo	ode m.			
		[Code]	[1D] <sub>16</sub> [27] <sub>16</sub> [29] <sub>10</sub> [39] <sub>10</sub>	[m] [n] [m] [n]						
		[Explanatic	n]							
	в	(1) n spec unregis	cifies the ID nur stration is specified	mber of the d, the comma	registration imaged	ge. When th I.	e ID numbe	r of		в
		(2) The rel	lationship betweer	n the value of	m and the conter	nt of specificati	on is as follow	VS:		
			m		Mode					
			0, 48	Norma	al mode					╞
			1, 49	Doubl	e width mode					
			2, 50	Doubl	e height mode					
	C		3, 51	Doubl	e height and width	mode				с
		(3) When	registered bit imag	pedataisnot	defined. this com	mand is ignore	ed.			
		(4) This co underli	ommand is not inf ne, character size	luenced by of , etc.) except	ther modes (high for upside-down	lighted printing printing mode.	, double prin	ting,		┝
		(5) When	registered bit ima	ge data excee	eds printing area,	data outside p	rinting area is	s not		
		printed	l.	-			-			
	D	(6) When	a registered bit im	age, characte	er data, bit images	s, and bar-cod	es coexist on	the		D
Т		same l	ine in page printin	g mode, the b	pottom end of a re	egistered bit in	nage is aligne	d as		
		• Char	acter data: Botton	n ends of cha	racters are aligne	d.				
		• Bit im	nage: Bottom ends	s of bit images	s are aligned.	characters ar	e not included	4)		┝
ROL								J).		
Z N N	Î	(7) After a	a registered imag	e is develop	ed, the position	of the charac	ter developr	ment		
		pointer								Е
ш										
DAT					······································	TITLE FTP-6	X8DCL/DSL4	45XSERIE	ES N	[
					]	DRW NO.			CUST.	1
		EDIT DATE DESIG	СНЕСК	DESCRIP	ΓΙΟΝ	FUJITSU CON	1 PONENT LIMITED	S H E	<sup>78</sup> /	-
		DESIG	CHECK		APPR		96.6.5		/	] <sup>F</sup>

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			1			2			3		I		4
		(42) (	GS <					-					]
	A	[Nar	me] I	Mark de	tection ex	ecution							A
		[Fun	iction]	The GS	<comma< td=""><td>undfeedsp</td><td>aper up to t</td><td>the next m</td><td>nark positic</td><td>m.</td><td></td><td></td><td></td></comma<>	undfeedsp	aper up to t	the next m	nark positic	m.			
-		[Coc	] [el	[1D] <sub>16</sub> [29] <sub>10</sub>	[3C] <sub>16</sub> [60] <sub>10</sub>								
		[Exp	lanation]										
	в	(1)	The GS	<comm< td=""><td>andfeeds</td><td>s paper up</td><td>to the next</td><td>markposi</td><td>tion.</td><td></td><td></td><td></td><td>в</td></comm<>	andfeeds	s paper up	to the next	markposi	tion.				в
		(2)	After a n head det	mark is o tection b	detected, ase; the p	paper is fe paper feed	ed (the hea then stops.	d is detec	cted) in ac	cordance wi	th the		
-		(3)	lf no mar starting p	rk is four point, an	ndwithin errorisa	the specific issumed ar	ed page len nd the page	gth from t fæd stop	he mark-d s.	etection-exe	cution		
		(4)	For an e	explanati	ion of the	e relationsh	ip between	mark pos	sition and	print line po	sition,		
	С		300 liic			nspecificat	DIB.						С
-													
	5												
<b></b>	D												D
NOL													
LSEC													$\vdash$
ONTRO													
ENTQ													Е
OCUM													
DAT								TITI	LE FTP-0 PRO	6X8DCL/DS 0DUCT SPE	L45XSE CIFICAT	RIES ION	
	EDI	T DATE	DESIG	CHFCK		DESCRIF	TION					CUST.	-
	DI	ESIG		CHEC	ĸ		APPR						F

		1 2 3 4
		(43) GS A+m+n
	A	[Name] After-mark-detection head distance setting A
		[Function] The GSA+m+n command sets the head detection distance to be used after mark detection.
		[Code] [1D] <sub>16</sub> [41] <sub>16</sub> [m] [n] [29] <sub>10</sub> [65] <sub>10</sub> [m] [n]
		[Explanation]
	В	(1) The $GSA+m+n$ command sets the head detection distance to be used after mark detection.
		(2) The value of parameter m is always 0.
		(3) Parameter n specifies the head detection distance in dot lines.
		(4) Condition 0 n 63 must be satisfied. If an "n" value outside this range is specified, a parameter error occurs. The previous head detection distance is not changed.
	C	(5) When the power is turned on or the printer is reset, parameter m is cleared to 0 and parameter n is set to 16.
	D	D
NOIL		
OLSEC		
ONTRO	↑	
ENTO	1	E
Daum		
DATE		TITLE FTP-6X8DCL/DSL45XSERIES PRODUCT SPECIFICATION
		DRW NO. CUST.
		EDT     DATE     DESIG     CHECK     DESCRIPTION       DESIG     CHECK     APPR   FUNTSU COMPONENT LIMITED
		96.6 FDNCA-4001-1

				1			2			3			4
			(44)	) GS E +	n								
	A		[N	ame]	Print qua	lity setting						-	A
			[F	unction]	The GS	E+ncom	mandset	s print quality	in pap	er units.			
			[C	ode]	[1D] <sub>16</sub> [29] <sub>10</sub>	[45] <sub>16</sub> [69] <sub>10</sub>	[n] [n]						
			(E	xplanation	]								
	В		(1	) The GS mode is	E + nco set or ca	ommand sonceled.	ets print c	juality for eac	ch pape	er and automatic divisior	ı print		в
			(2	) The five high-orc	e low-orde ler bits of	er bits of paramete	paramete r n are dis	er n are use sregarded.	d to se	lect paper quality. The	three		
		(3) The relationship between four low-order bits of parameter n and paper quality is as follows:											
	n Mode Paper quality Applicable Manufacturer												
	C		0	TYPE[	1]							-	С
			2	TYPE[	3]			TF50KS-	-E4	Nippon Paper Mfg. Co	o., Ltd.	<u>ı                                    </u>	
			3	TYPE[	4] Si	tandard pa	aper	PD150R PD170R	,	Oji Paper Mfg. Co., Lt	d.		$\vdash$
			4	TYPE[	5]			TP60KJ-	R	Nippon Paper Mfg. Co	o., Ltd.		$\vdash$
			5	TYPE[	6]			TF60KS-	·Ε	Nippon Paper Mfg. Co	o. Ltd.		
			6	TYPE[	7]			HA220A	Ą	Mitsubishi Paper Mills	, Ltd.	_	
			7	TYPE[	8]							_	
	D		8	TYPE [	9] Lo	ong preserva	ation paper	AFP-235		Mitsubishi Paper Mills	, Ltd.		D
	D		9	TYPE[1	0]								
			10	TYPE[1	1]								
Z			11	TYPE[1	2]							_	
OLL			12	TYPE[1	3]								
EC			13		4] Di	isable to ι	se						$\vdash$
OLS			14		5] 61								
OCUMENTCONTR	1		(4	) The initi	al value c	of paramet	ernis 3.					L	Е
ED													
DAI									TI	TLE FTP-6X8DCL/DSL	45XSEF	RIES	
		$\left  - \right  - $							DR	W NO.		CUST	-
		EDIT D	ATE	DESIG	CHECK		DESCRIF	TION		FUJITSU COMPONENT LIMITE	Ð	81	F
		סופשת						AFPK		990		<u>□                                    </u>	<b>_</b>
										50.0	L DINUM-4	1-100.	

I

	ſ	(45) GS V + n + m (effect only a board included a cutter driving circuit)	
	A	[Name] Paper cutting	A
		[Function] The paper cut is executed.	
_	_	[Code] [1D] <sub>16</sub> [56] <sub>16</sub> [n] [m] [29] <sub>10</sub> [86] <sub>10</sub> [n] [m]	
		[Explanation]	
1	в	(1) The relationship between parameter n and the operation is as follows:	в
		n Operation Note	
		1,49 Partial cutting Without m 65 Paper feed and full cutting With m	
_		66 Paper feed and Partial cutting With m	
		(2) Full cutting completely cut off paper.	
	С	(3) Partial cutting leaves part of the paper uncut.	С
		(4) When n is 65 or 66, paper cut is executes after feeding related m. The parameter m indicates the amount of feeding.	
_		(5) The parameter m indicates dot line and can be set range is $0 m 255$ .	
]	D		D
NOIL			
OLSEC			
NINO	11		
TENT			Е
DOCUN			
L 日			
DA	_	TITLE     FTP-6X8DCL/DSL45XSERIES       PRODUCT SPECIFICATION       DRW NO.	
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	I	DESIG   CHECK   APPR   F / 96.6 FDNCA-4001-1	L,

L

		1	2		3		2	ŀ
		(46) GS e+n+m						
	A	[Name] Barcodew	ridth setting					А
		[Function] The GS e	+n+m command s	ets the widt	h of a bar code.			
		[Code] [1D] <sub>16</sub> [65] [29] <sub>10</sub> [101	<sub>16</sub> [n] [m]   <sub>10</sub> [n] [m]					
		[Explanation]						
	В	(1) Parameter n speci	fies the width of a n	arrow bar in	dots.			в
		(2) Parameter mspec	ifies the width of av	vide bar in do	ots.			
		(3) When the code parameter n is se	does not consist ( tas the minimum w	of wide bars idth.	and/or narrow bars,	the value of		
		(4) The initial value of	parameter n is 2. T	he initial valu	e of parameter m is 6.			
	G	(5) The following cond	ditions must be satis	fied:				
	C	1 n 29 1 m 2	55 55					C
								F
	D							D
NOI								
LSECT								╞
ONTRO	↑							
IENTO	1							Е
DOCUN								
IE			1					Ļ
DA					DRW NO.	CT SPECIFICA	ATION CUST.	
		EDT DATE DESIG CHECK	DESCRIF	TION APPR	FUJITSU COMPON	IENT LIMITED	SH 83	F
						96.6 FDNC.	A-4001-1	1

			1			2				3			2	1
		(47) (	GS h+n											
L	A	[Nai	me] Ba	ar code he	eight settir	ng								A
		[Fur	nction] T	he GS h <sup>.</sup>	+n comm	and sets	the heigh	ntofa	bar coo	Je.				
_	_	[Cod	de] [1 [2	D] <sub>16</sub> [68] <sub>1</sub> 29] <sub>10</sub> [104]	<sub>6</sub> [n]   <sub>10</sub> [n]									
		[Exp	olanation	]										
]	В	(1)(	Condition	1 n 25	5 must be	satisfied.								В
		(2) F	Paramete	r n specifie	es the heig	ht of a ba	r code in d	ots.						
		(3)	The initial	value of	paramete	rn is 60.								
_														
(	С													С
_														
1														D
· · · ·														
NOL														
LSEC														-
NIRO	N													
INTOC														Е
DOUM														
DATE									TITLE	FTP-6X8 PRODU	3DCL/DSL4 JCT SPEC	15XSEI IFICAT	RIES ION	<u> </u>
	L T Y								DRW NO				CUST.	-
	ыл DE	DATE SIG	DESIG	CHECK CHECK		DESCRIF	APPR		FW		NENTUMITED			F
			L	•	<u> </u>					·]	96.6 F	DNCA-	400 1-1	

					I				I		1		
				1			2			3		2	، 1
			(48)	GS k+m	n+n+d₁ to	o d <sub>n</sub>							
	А		[Na	me] B	8ar code pr	inting							A
			[Fu	nction] 7	The GS k-	+m+n+d <sub>1</sub>	to d <sub>n</sub> c	ommand s	elects	a bar code type and prir	nts		
				a	a bar code	Э.							
			[Co	de] [ [	1D] <sub>16</sub> [6B] [29] <sub>10</sub> [107	<sub>16</sub> [m] [n] ] <sub>10</sub> [m] [r	[d₁] to [d 1] [d₁] to	n] [d <sub>n</sub> ]					
			[Ex	planatior	ו]								
	В		(1)	Paramete	er mspecif	ies the typ	e of bar co	odes to be pr	rinted	(see the following table):			в
			Γ	m Type	e of bar	Nu	mber of r	ecords	1				
			e	65 UPC	-A	Fixed (1	1 n 12	<u>')</u>	_				
		Ì	e	6 Und	efined								F
			e	67 JAN	<b>I(EAN)</b> 13	Fixed (1	2 n 13	3)					
			6	58 JAN	I(EAN)8	Fixed (7	′n 8)						
			6	59 COL	DE39	Variable	<b>)</b>		_				
	С		7			Variable	e (an even	number)					C
			(2) p	The com aramete	mandconfi rm	iguration, d	code, defir	nition area, a	ind par	t of the conditions depend o	n		
	D		(3) ca pa th da	Paramete annot be arameter ne bar coo ata.	er d specifie printed w h d specifies de prior to t	es the cha en the dat a charac his comm	racter to b a length is ter code th and is prir	e printed. If fixed, the co nat cannot be nted but the s	param orrespo e printe subsec	eter d specifies a character o onding bar code is not printe edw hen the data length is va quent data is handled as ordi	code that d. <b>f</b> ariable, inary		D
ION			(4) d	After a ba ata.	arcode is e	xtended, t	the printing	gstartpositio	on is se	et to the next dot of the barco	odeend		
SECI			(5)	<b>f</b> the prin	t data exce	eds the p	rinting area	aofwhichw	idth is	one line, the overflowing par	t of the		╞
ROL			da	ata is ign	ored.								
INTCONT	1		(6) fe	if the bar ad by the	code is hig bar code h	her than t eightwith	he line spa out regard	acing setwith to the speci	n the <i>E</i> fied lin	ESC 2 or ESC 3command, p e spacing.	oaperis		E
DUME			(7) sr	When NL Decified i	JL is specif n ITFwith r	ied at the m=70, the	check digi check dig	t position orv it is calculate	when ad auto	an odd number of data recor omatically. The calculation res	ds is sults are		
Д			a	dded to t	he barcode	e. When d	lata other	han NUL is	specifi	ed at the check digit position	, the		
ΤE		L.	re	eceived d	ata is expa	nded in th	e bar cod	ew thout mo	dricat	ions.	(=) (= = =		╞
DĂ		$\vdash$								TITLE FTP-6X8DCL/DSL PRODUCT SPFC	45XSEF CIFICAT II	RIES ON	
										DRW NO.		CUST.	1
		FDT	DATE	DESIC	CHECK		DECOU		$\neg \uparrow$			95 /	-
		DES			CHECK		DESCRIP	APPR		FUJITSU COMPONENT LIMITEE			F

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- (8) When one line contains both a bar code and characters to be printed, the bottom of these characters and the bottom of the bar code are aligned at the same level.
- (9) Two or more bar codes cannot be contained on the same line. If this GS command is received when there is a bar code in the print buffer, the data contained in the print buffer is automatically printed, after which the command is accepted.

(10) A code area which is available to be set by each bar codes is shown as below :

A kind of bar codes	Code area
UPC-A, ITF, EAN-13/8	'O'~ '9'
CODE 39	'0'~ '9', 'A'~ Z', ' , '\$`,'/, '+',%'
CODABAR	'0'~ '9','-','\$',','/','.','+','A'~ 'D'



	_			1			2			3		4	ļ
			(49)	GS w+n	I								
	A		[Na	ime] B	arcodewi	idth settin	g						A
			[Fu	nction] B	ar code v	vidth maq	gnificatior	setting					
-	_		[Co	ode] [´ [ź	1D] <sub>16</sub> [77], 29] <sub>10</sub> [119	<sub>16</sub> [n] ] <sub>10</sub> [n]							
			[Ex	planation	]								
	в		(1)	Paramete	r n specifie	es the hori	zontal ma	gnification of	a bar code.				В
			(2)	Condition	1 n 25	5 must be	satisfied.						
			(3)	The initial	value of p	arameter ı	n is 1.						
-	_		(4)	Both the	widths of a	a narrow l	bar and a	widebarisı	multiplied by	n times.			-
	С												с
-													
	D												D
Z													
ECTIC													
IROL S	•												
TCON	1												
JMEN													Е
DOCI													
ATE	_								TITLE	FTP-6X8DCL/D	SL45XSEI	RIES	<u> </u>
מ	_								DRW NC	PRODUCT SP	ECIFICAT	ON CUST.	
	E		ATE	DESIG	CHECK		DESCRIF	PTION	FU.	JITSU COMPONENT LIMI	TED	s 87	F
	I	DESIG			CHECK			APPR		96	6.6 FDNCA-4	节 / / 4001-1	r

						2	1		
ſ	(50) 00		2			3		2	]
	(50) GS	a + n		(effect o	only when se	erial interfaces	elected	)	
A	[Name]	Setting and	l cancellation of auto	o status trans	mission.				A
	[Function	on] When the utomatic s	serial communicat status transmission	ions mode is is selected.	selected, the	e target status fo	orthe a	a	
_	[Code]	[1D] <sub>16</sub> [61] [29] <sub>10</sub> [97]	<sub>16</sub> [n] ∣ <sub>10</sub> [n]						
	[Explar	nation]							
в	(1) The	relation of the t	argetstatus for n and	d the transmiss	sion is as fo <b>ll</b> ow	'S.			В
	Bit		Status	Se	etting				
	0	Undefined							
	1	State of onli	ne/off-line	0:Invalidity 1:Effective	,				
	2	State of erro	r	0:Invalidity 1:Effective	/ }				
С	3	Undefined							С
	4	State of auto	omatic paper feed	0:Invalidity 1:Effective	/ }				
	5-7	Undefined							
D	(2) An i (3) Stat beca (4) Whe (5) This	nitial value becc us is transmitte use each status en all status is ir command is ef	omes n=0. d w hen this comman s shows a present sta nvalid, the automatic : ffective only serial inte	d is received o ite, the status f status transmi erface board.	r status is chai rans mission of ssion is not doi	nged. At this time, Finvalidity is not do ne.	one.		D
	(6) The	re is a possibility	y to cause the delay l	between recep	otion of comma	and			╞
	and se	following status	s in four bytes is trans	smitted without	confirming ho	st's state.			E
-						TP-6X8DCL/DSL PRODUCT SPEC	45XSER CIFICATIO	IES DN	_
			DECORT	TION	DRW NO.		2	CUST.	-
I	DESIG	CHECK		APPR	FUJITSI	J COMPONENT LIMITE		°°/	F

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The first byte (printer information).

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Bit	Status	Caption
0	Unused	0: Fixation
1	Unused	0: Fixation
2	Unused	0: Fixation
3	online/off-line	0: online 1: Off-line
4	auto-loading	0: not auto-bading 1: auto-loading
5	Unused	0: Fixation
6	Formsendingwith /ATF signal	0: not feed 1.feed
7	Unused	0: Fixation

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The second byte. (error information)

Bit	Status	caption
0	Unused	0:Fixation
1	Receive data abnormal	0:normality 1:abnormality
2	Head up (platen open)	0:undetection 1:detection
3	The cutter is abnormal	0:undetection 1:detection
4	Markcheckfailed	0:undetection 1:detection
5	Hardware error	0:undetection 1:detection
6	Head temperature is abnormal	0:undetection 1:detection
7	Power supply voltage is abnormal	0:undetection 1:detection

Note 1) Hard ware error is abnormal of internal RAM, head heat reckless driving, fuse blow out.

FTP-6X8DCL/DSL45XSERIES TITLE PRODUCT SPECIFICATION DRW NO. CUST. EDT DESIG CHECK DESCRIPTION DATE 89 FUJITSU COMPONENT LIMITED CHECK DESIG APPR 96.6 FDNCA-4001-1

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The third byte (paper detection status)

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Bit	Status	caption
0	near end	0:undetection 1:detection
1	Unused	0: Fixation
2	out of paper	0:undetection 1:detection
3-7	Unused	0: Fixation

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The fourth byte (parameter) .... specification parameter (Refer to the FS r command)



# SECTION I List of Character Codes

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### 1 National Character Code

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DOCUMENT CONTROL SECTION

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	0	1	2	3	4	5	6	7	8	9	A	в	с	D	E	F
0	NUL		SP	0	@	Р	•	р	_	-	SP	-	9			×
1			!	1	Α	Q	а	q	-		0	7	チ	L	F	円
2		DC2	•	2	В	R	b	r	-	Н	٢	1	ッ	×	÷	年
3			#	3	С	S	с	s	-	F	1	ゥ	テ	モ	٦,	月
4			\$	4	D	Т	d	t				エ	۲	ヤ	◢	日
5			%	5	Е	U	е	u		—	•	オ	ナ	ユ		時
6			&z	6	F	v	f	v		I	7	力	Ξ	Э	٦	分
7				7	G	W	g	w			7	+	¥	ラ	•	秒
8			(	8	Н	х	h	x	I	Г	4	2	ネ	IJ	+	Ŧ
9	HT	EM	)	9	I	Y	i	У	1	7	2	$\mathcal{T}$	1	ル	۲	市
А	LF		*	:	J	Z	j	z	1	Ľ	x	Ξ	$\sim$	ν	+	⊠
В		ESC	+	;	Κ	(	k	{	I	Г	*	サ	٤		+	町
С	FF	FS		<	L	¥	1	1		r	*	2	フ	ヮ	•	村
D		GS	-	=	М	]	m	3		5	고	ス	$ $ $\sim$	$\sim$	0	人
Е		RS		>	Ν	*	n	~		5	э	セ	*	*	/	*
F		US	/	?	0	_	0	SP	+	ノ	y	y	7	,	$\mathbf{i}$	SP
								(In	thist	able,	"SP"	indic	ates	a spa	ace.)	

#### Note 1)

Each code is represented in hexadecimal notation.

#### Note 2)

If an undefined code ([00]<sub>16</sub> to [1F]<sub>16</sub>) or an undefined ESC, FS, or GS sequence listed in this table is received, an abnormal operation may occur. (However, when image print data, character registration data, or command parameters are received, they are handled as ordinary data.)

															-
										TITLE <b>F</b>	TP-6X	8DCL/DSL45	XSERIE	S	
											PROD	UCT SPECIFI	CATIOI	V	
										DRW NO.				CUST.	
EDT		DATE	DES	SIG	CHECK		DESCRIF	PTION					S H	01 /	
DE	ESIG				CHECK			APPR		100	130 001		E T	"/	F
			1									97-01	FDNCA	-4902-1	_

2 Overseas Character Codes																	
X.	Upper	0	1	2	3	4	5	6	7	8	9	A	В	С	D	Е	F
	0	NUL		SP	0	@	Р	`	р	Ç	É	á		L	Ш	α	≡
	1			!	1	А	Q	а	q	ü	æ	í		T	⊤	β	±
	2		DC2	"	2	В	R	b	r	é	Æ	ó		т	π	Г	≥
	3			#	3	С	S	с	s	â	ô	ú		ŀ	L	π	≤
	4			\$	4	D	Т	d	t	ä	ö	ñ	-		F	Σ	ſ
	5			%	5	Е	U	е	u	à	ò	Ñ	=	+	F	σ	J
	6			&	6	F	V	f	v	å	û	а	╢	F	Г	μ	÷
	7			'	7	G	W	g	w	Ç	ù	o	П	⊩	#	т	≈
	8			(	8	Н	х	h	x	ê	ÿ	ż	F	L	ŧ	Φ	0
	9	HT	EM	)	9	I	Y	i	у	ë	Ö	Г	╣	Г	Г	Θ	•
2	А	LF		*	:	J	Z	j	z	è	Ü	٦		⊥	Г	Ω	•
	В		ESC	+	;	К	[	k	{	ï	¢	1⁄2	ה	ТГ		δ	$\checkmark$
-	С	FF	FS	,	<	L	١	I	Ι	î	£	1⁄4	Ц	╠		8	n
_	D		GS	-	=	М	]	m	}	ì	¥	i	Ш			ø	2
	Е		RS		>	Ν	^	n	~	Ä	Pt	«	⊣	╬		3	•
	F		US	/	?	0	_	0	SP	Å	f	»	٦	⊥		$\cap$	SP
)			Note	1)							(In	thist	able, '	"SP" i	ndicat	esas	pace.

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### Each code is represented in hexadecimal notation.

#### Note 2)

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If an undefined code ([00]<sub>16</sub> to [1F]<sub>16</sub>) or an undefined ESC, FS, or GS sequence listed in this table is received, an abnormal operation may occur. (However, when image print data, character registration data, or command parameters are received, they are handled as ordinary data.)

TITLE FTP-6X8DCL/DSL45XSERIES PRODUCT SPECIFICATION DRW NO. CUST. EDT DATE DESIG CHECK DESCRIPTION FUJITSU COMPONENT LIMITED 92 DESIG CHECK APPR 97-01 FDNCA-4902-1 1

				Pac	kaging	SE , Stampi	ECTION ng and	l Othe	r Conditions			
A	1	Pack	aging	hoord in .	a a lia di i			<b>F</b>			~!~~~	
		speci	fication.	board is p	раскес і	n accorda	ince with	Fujits	su component sta	andard packa	jing	
	2	2 Stam	ping									
		The Iabel	type, seria affixed to	al number, this control	and revis board.	sion inform	ation is sta	ampeo	d on the Fujitsu Co	mponent stand	lard	
	3	6 Othe	r conditic	on								
_		(1) C	etected e	rrors must	be resolv	ved by mut	ual agreer	menti	n accordance with	this specificati	on.	
В		(2) T a	o change greed upo	the conter on in advar	nts of this nce.	s specificat	ion, the d	nange	es must be reporte	d on and mutu	ıally	
		(3) T c w	he model ompatibili vithout pric	described ty is maint or notice.	in this s tained, th	pecification ne items n	n is the sta ot describ	andaro ed in	d model. Therefore this specification	e, when functio may be chan	onal ged	
		(4) If m	more det nust be re	ailed infom solved by r	nation is mutual ag	required of greement.	r ambiguo	us info	ormation is detecte	d, these proble	ems	
~												
С												
D												
ł												
I												
									TITLE FTP-6X8D	CL/DSL45X S	ERIE	ĒS
	$\square$								PRODUC DRW NO.	T SPECIFICA	<u>гю</u> л	V CUST
	FDT	DATE	DESIG	CHECK		DECOUP	TON		•			<u> </u>
	DES	SIG	DESIG	CHECK		DESCRIPT	APPR		FUJITSU COM PO	NENTLIMITED	H E T	93/

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# Appendix 1-A Setting The Dipswitches

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The DIP switches (DSW1) mounted on this board must be set in accordance with the use conditions as explained below.

## A-1 DSW1

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Switch No	Setting Eurotion	Set	ting	
Ownon No.	Setting Punction	Bit1	Bit2	
		OFF	OFF	19200BPS
1 0	Poud rate	ON	OFF	9600BPS
1,2	Dauu Tale	OFF	ON	4800BPS
		ON	ON	2400BPS

Switch No	Setting Function	Setting				
		ON	OFF			
3	Flow control	XON/XOFF	DTR/DSR			
4	Receiving buffer size	45 byte	4k byte			
5	Even/Odd	Even	Odd			
6	Parity	Valid	Invalid			
7	Auto line feed setting	Invalid	Valid			
8	Interface select	RS-232C	Centro			

Note .Serial Interface setting:

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· Length of stop bit is 1bit fixed.

- · Data length setting.is 8bits fixed.
- Only when SRAM mounted,4kbyte of receiving buffer size is able to use.

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						TITLE F	TP-6X	8DCL/DSL4X	SERIE SATION	S	
						DRW NO.				CUST.	
EDII	DATE	DESIG	CHECK	DESCRI	PTION	- EU	ITSUCON		SH	94/	
DE	DESIG CHECK			APPR				E	<b>°</b> /	F	
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			List	Appendix 4 of Commar	nds				
	А	(1) HT (2) LF (3) FF (4) DC2 (5) ESC EM + (6) ESC RS (7) ESC US	n	Horizontal tab Line feed Forms feed Power down Setting the ar Black-white re	nount of the feeding	g at automatic	paper fe	eed	A
	В	$(7) ESC US \\ (8) ESC ! + n \\ (9) ESC % + n \\ (10) ESC & + y \\ (11) ESC * + m \\ (12) ESC 2 \\ (13) ESC 3 + n \\ (14) ESC ? + n \\ (15) ESC @ \\ (16) ESC A + n \\ (17) ESC C + n \\ (18) ESC D + d_1 \\ (19) ESC J + n \\ (20) ESC K + n \\ (20) ESC K + n \\ (17) ESC US \\ (16) ESC - 1 \\ (17) ESC - 1 \\ (1$	$h_{1}^{0}$ + c <sub>1</sub> + c <sub>2</sub> + x + d <sub>1</sub> to d <sub>n</sub> + n <sub>1</sub> + n <sub>2</sub> + d <sub>1</sub> to d <sub>n</sub> to d <sub>n</sub> + NUL	Printing mode External regis External regis Bit image prin 1/6-inch line p Line pitch set External regis Printer resetti Line spacing Page length ( Horizontal tab Forward page Backward page	eversed printing car e specification stration character sp stration character de ting bitch setting ting stration character de ng setting number of lines) set o position setting er feed per feed	becification/ca ofinition	ncellatio	n	в
	С	<ul> <li>(21) ESC R + n</li> <li>(22) ESC V + n</li> <li>(23) ESC X + n</li> <li>(24) ESC Y+1+</li> <li>(25) ESC c + 1</li> <li>(26) ESC d + n</li> <li>(27) ESC e + n</li> <li>(28) ESC s + n</li> <li>(29) ESC t + n</li> <li>(30) ESC { + n</li> </ul>	+ m xa+0+n + n	International of Right rotation Setting of time Kanji data cho Internal proce n-line feed Backward n-li Printing speed Character coo Upside-down	character specificati 90° specification/ca e to turn off motor eck essing setting ne feed d setting de table selection printing setting/can	ions ancellation cellation			C
		(31) FS ! + n (32) FS &		Kanji printing Kanji printing	mode collective spe mode specification	ecification			
	D	(33) FS * + m + (34) FS . (35) FS 9 + n (36) FS C + n (37) FS E + n (38) FS r + n (39) FS W + n (40) GS & + m	• n <sub>1</sub> + n <sub>2</sub> + d <sub>1</sub> to d <sub>N</sub> + x + y1 + y2 + d <sub>1</sub> to d <sub>N</sub>	Bit image prin Kanji printing Detection fun Kanji code sy Applied energ Notification pa Kanji double he Registered bir	ting mode cancellation ction enable/disable stem selection gy adjustment arameter setting eight and width printing t image definition	e setting g specification/	cancellati	on	E
NOIT		(41) GS ' + m + (42) GS < (43) GS A + m - (44) GS E + n (45) GS V+n+m	n + n	Registered bi Mark detectio After-mark-de Print quality s Paper cutting	t image printing n execution etection head distan etting	ce setting			
DOCUMENT CONTROL SEC	ſ	(46) GS e + n + (47) GS h + n (48) GS k + m + (49) GS w + n (50) GS a + n Note) (38) and (	n ⊦ d₁ to d <sub>k</sub> + NUL (50) are Valid only whe	Bar code wid Bar code heig Bar code prin Bar code wid Automatic not n RS-232C inte	th setting th setting ting th magnification sett tification setting of s erface is selected.	ting status			Е
ATE					TITLE FTP-6X	8DCL/DSL4X		S	╞
					DRW NO.	JCT SPECIFIC		CUST.	
		EDIT DATE DESIG CH	ECK DESCI	RIPTION	FUITSUCON	PONENTLIMITED	S H E F	99/	- -
						97-01	FDNCA-	4902-1	1.

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		]	1	2		3			4				
		Appendix 5 Conditions for Use											
	٨	То	use the printer w	ith this control board	d built in, the	following conditions	s must be satis	sfied.		٨			
	A	(1)	Power supply a. The power power sup normal ope	supply unit that sat ply unit doses not eration is not assure	isfies the spe satisfy the d and errors	cified specification specified specifica may occur.	must be used ations are use	. If ed,	1	-			
			b. When the becomes a	power is turned on, pprox TBD or highe	the MCU m r and enters	ust stop until voltag	je of VH syste tandby.	əm	ŀ				
	В	<ul> <li>c. The MCU automatically controls the print density in accordance with the detect power voltage. The power voltage is detected every four dot-lines. If the print head power voltage changes during this period, the density cannot be controlled. If the power voltage changes extremely, an overload may apply to the print head. To prevent this, the print head voltage variation must be kept within ±5%.</li> </ul>											
		<ul> <li>(2) The printing head heat         <ul> <li>a. The print head becomes a high temperature very much along with the print.</li> <li>Please do not touch the print head and the support board directly by the hand.</li> </ul> </li> </ul>											
			b. When the transforme	print head is pulled d by heat.	down with p	aper run out state,	platen might	be					
	C	(3)	The motor heat a. The motor touch by th	and motor drive ele le hand.	ment become	e a high temperatur	e. Please do r	not	(	С			
		(4)	Cutter a. Please dor received or	n't insert fingers or f r troubles may occu	oreign matte	rs to the cutter part	. Injuries may	be	-				
	D								1	D			
NO													
DOCUMENT CONTROL SECTI	^								Ĩ	E			
MTE						TITLE FTP-6X	(8DCL/DSL4X	SERIES	<u> </u>	_			
						DRW NO.	JCT SPECIFIC		CUST.				
		EDIT DATE DESIG	DESIG CHECK	DESCRIF	APPR		/PONENTLIMITED	S H E T	100/	F			
		1	1				97-01	FDNCA-4	1902-1				

			1		2		3					
	А	(5)	) Paper a. The pape can t b. If pap may c. If the qualit	recommended p er is the heat-ser touch the print he per is set so that occur. Set pape e paper that does ity is not assured	paper is whether is the side state s	ound on a r e. Set the pa s oblique to t s edge is par fy the specif s may occur	oll. The external side of per so that the heat-ser he paper guide, a skew f allel to the paper guide. ied specifications is user	the rolled nsitive side eed or jam d, the print				
		<ul> <li>d. Heat-sensitive paper is liable to deteriorate in a high-temperature, high-humidity environment. Especially when the temperature increases up to 60 or higher, coloring may occur. Carefully store heat-sensitive paper.</li> <li>(6) Paper jam         <ul> <li>a. When the paper jam is generated, the power supply of the printer is cut and</li> </ul> </li> </ul>										
	В		a. when pleas off th occa printi	n the paper jam se raise the hea he power supply isionally damage ing in the state o	d and rem of the pr d. Moreov f the form	ioves the par inter, if the ver, causes t jam.	per supply of the printer per. When working with connector comes off, the he printer to break down	ns cut and out turning he head is n when the				
		<ul> <li>(7) Water and foreign matter         <ul> <li>Adhering liquid such as water or metal chips such as needles and pins to the control board may cause a printer failure.</li> <li>b. If printing is performed in a condensation state, the print head may be</li> </ul> </li> </ul>										
	C	(8)	dama starti ) Impact a. Beca comp	aged. If condent ing printing. ause this produ ponents, do not o	sation is c uct is ma drop it or h	de of prec	ision electronic and r	ntly before nechanical force of an				
		(9)	impa When not a. Whe the h	ict to the product t using for a long n the printer is r head. When the h	time time not used fo nead is left	se errors to c or a long time t lowered, pla	e, please put into the state aten might be transforme	ate to raise ed.				
	D	(10	0)Installatio a. This in a p b Pleas	n product must be place free of vibr se ground the pr	e kept hori ation.	zontally as r	nuch as possible. Use th	nis product elv				
ONTROL SECTION	Ŷ	<ul> <li>c. The printer with this board mounted must not be used in an environment subject to direct sunlight or dust (oil or iron dust).</li> <li>d. The power supply line must be separated from other devices (e.g., large-sized motors) that cause noise.</li> <li>e. The printer with this board built in must be installed so that it is positioned as far away as possible from large-noise-emitting devices such as high-voltage</li> </ul>										
E DOCUMENTO			devic	ces and large-siz	red motors		_					
DAT							TITLE FTP-6X8DC	L/DSL4X SER	IES			
							DRW NO.	Specificatio	CUST.			
					DECOR	TION			5			
		DESIG		CHECK	DESCRIP	APPR	FUJITSUCOMPONE	NTLIMITED				

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			f.	To connect the connec errors may	t or remov ctor is con v occur.	re the con inected or	nector, alway removed wl	/s turn off t hile the pov	he power in a ver to the pr	advance. If inter is on,	
Α			g.	Please loc correctly. T confirm ins	ck surely, There is no sertion up t	and conr lock med to the dee	nect the cor chanism in th pest part, ple	nnector of ne connecto ease.	connected e or on the hea	each cable ad side and	
			h.	Impossible device. Es influences causes ab connection connection	power mupecially, it the press normal he of the he	ust not joir is necess surizing po eating and ead conne	n each cable ary to note b ower of the the head da ector is impe	when you r because the head. More amage, etc rfect enoug	mount the pri head conne eover, please of the head gh about the	inter on the ection cable e note that d when the e connector	
В			i.	If continuo head heat usable tem detection f to the print	us printing may build perature. unction. P enabling	g is perform up and th In this cas Printing res temperatu	med at a high he head temp se, printing m sumes autom re.	h print rate perature ma hay be stopp hatically afte	(high print do ly exceed the ped by the th er the head o	ensity), the e maximum ermal error cools down	
			j.	If power is undergo e period of t standby sta	supplied t lectrolytic ime, turn o ate. (See	to the print corrosion off the pove the "FS s	t head for a l . If the no-p wer to the pr 9" (detection	ong period rinting stat rint head ar function set	of time, the l e continues nd set the pr tting commar	heater may for a long inter to the nd).)	
C											
D											
ţ											
								TITLE	FTP-6X8DC	L/DSL4X SER	RIES
								DRW NO	<u>PRODUCT</u>	SPECIFICATIC	<u>)N</u>
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