FUJITSU

INTERFACE BOARDS

FOR 24V FTP-609 SERIES

FTP-629DSL350-R SERIES

■ **HIGHLIGHTS**

- 24V FTP-609 series I/F board for 2- and 3-inch mechanisms

- Supports USB (V 2.0) and high speed serial (460kbps) I/F

- Supports 2-D bar code and graphics

- Windows® CE 5.0/2000/XP/Vista, Linux drivers
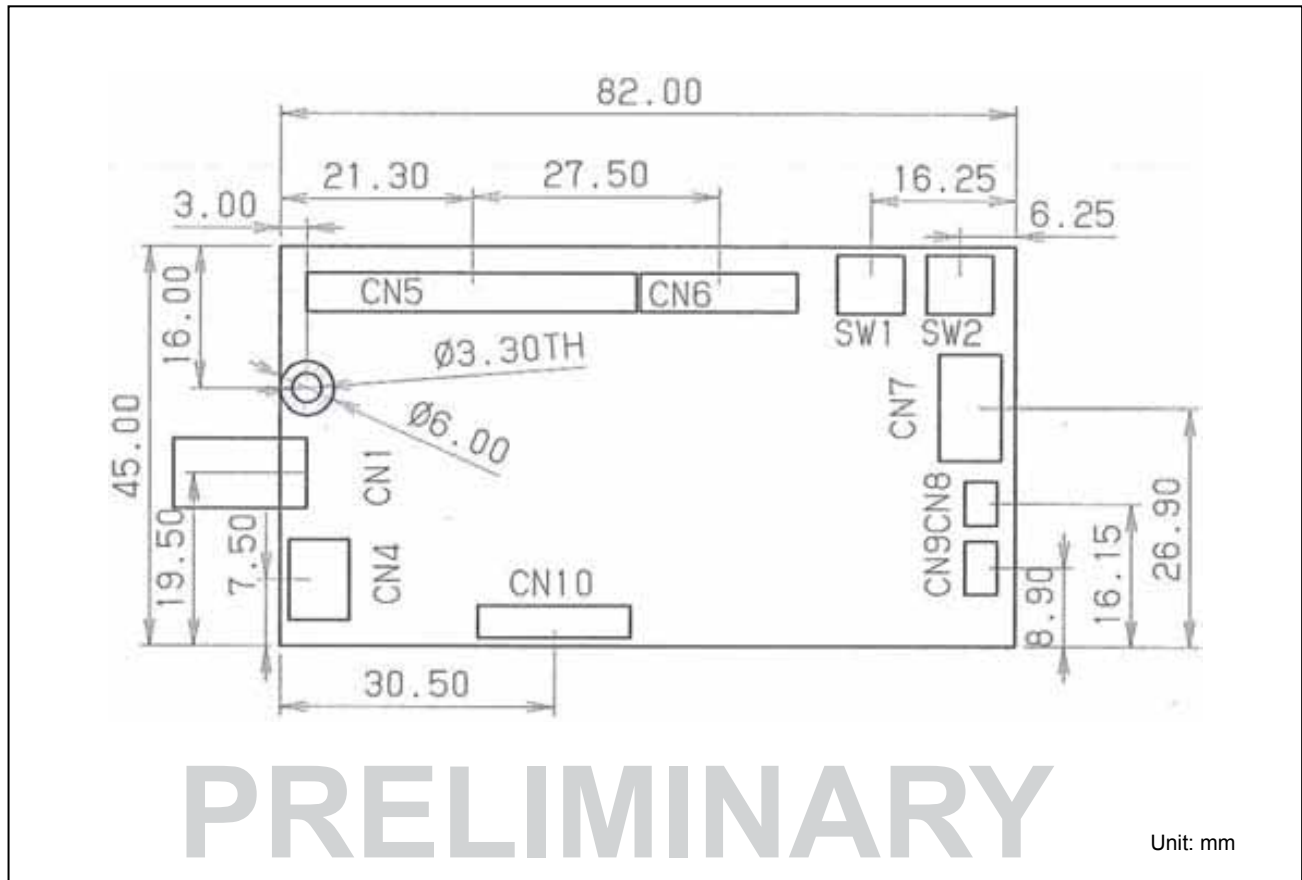
- UL File No. E171434

- RoHS compliant

■ **PART NUMBERS**

Part Number	Interface Type	Flash	SRAM	Cutter	Drivers	Mechanism Part Number
FTP-629DSL350R	USB	O	O	O	Windows® CE5.0 2K/ XP/Vista, Linux	FTP-629MCL054 FTP-629MCL103 FTP-629MCL354 FTP-629MCL383#01, #02 FTP-639MCL054 FTP-639MCL064 FTP-639MCL103 FTP-639MCL113 FTP-639MCL354 FTP-639MCL364 FTP-639MCL383#01, #02 FTP-639MCL393#01, #02 FTP-649MCL054 FTP-649MCL103
FTP-629DSL350#10R	USB / Serial	X	O	X		

Item	Specifications		Comments
RS-232C	Data send receive speed: Synchronous method: Handshake: Parity:	9.6k, 19.2k, 38.4k, 115.2k, 230.4k, 460.8 kbps Full duplex DTR/DSR, XON/XOFF control Non, even, odd	Selectable by command
USB V2.0	Transmission route: Interface class:	Full speed 12Mbps Printer device	

■　**EXTERNAL DIMENSION SPECIFICATIONS**

1.　**External Dimension Chart of the Control Board**

Unit: mm

2.　**Connector Types of Control Board**

No.	Name	Function	Remarks
CN1	Power supply connector	To connect +24V power supply	
CN2	Connector for RS-232C interface control signal connection	Connector for FTP-629DSL350#10-R	
CN4	USB interface connector	To connect USB interface	
CN5	Thermal head connector	To connect the thermal head	
CN6	Paper feed motor connector	To connect paper feed motor	
CN7	Cutter motor connector	To connect the cutter motor	
CN8	Near end sensor connector	To connect the near end detection switch	
CN9	Not used		
CN10	Not used		
SW1	Feed switch	Paper feed switch	
SW2	Reset switch	Reset switch	
LED1	Status LED	Printer status display LED	

■ CONNECTOR PIN ASSIGNMENT

1. Control circuit board (FTP-629DSL350R)

(1) Connector (CN1) Power supply Connector

Connector part number: B2PS-VH (LF) (SN) (J.S.T.) or equivalent
Mating connector part number: VHR-2 (J.S.T.) or equivalent

No	Signal	Description	Direction
1	24V	24V power supply	IN
2	GND	Signal ground terminal	-

Note: Please use cable of more than 10A

(2) Connector (CN2) (RS-232C interface extended control circuit board connector)

Connector part number: 52559-10552 (Molex) or equivalent

No	Signal	Contents	Direction
1	3.3V	3.3V power supply	OUT
2	CMOS_TXD	Transmission data (communication between control board)	OUT
3	CMOS_DTR	Data terminal ready (communication between control board)	OUT
4	CMOS_RXD	Receive data (communication between control board)	IN
5	CMOS_DSR	Data set ready (communication between control board)	IN
6	/SLCTIN	Detection function setting signal	IN
7	/INPRM	Initialization request signal	IN
8	/ATF	Paper feed signal	IN
9	3.3V_GND	Signal ground	-
10	FG	Frame ground	-

(3) Connector (CN4) (USB interface connector)

Connector part number: 51387-0530 (Molex) or equivalent
Mating connector part number : UX40-MB-5P (Hirose) or equivalent
Recommended cable length: 1m (FTP-629Y301-R)

No	Signal	Contents	Direction
1	Vbus	Bus power supply	IN
2	D-	Differential data input/output D-	IN/OUT
3	D+	Differential data input/output D+	IN/OUT
4	N.C.	Not connected	-
5	3.3V_GND	Signal ground	-

Note: Please do not connect power supply line and signal line for N.C. terminal

(4) Connector (CN5) (Thermal head connector)

Connector part number: 52610-3071 (Molex) or equivalent

No	Signal 629MCL	Signal 639MCL (579)	Signal 639MCL (640)	Contents	Direction
1	GND			3.3V ground terminal for the platen open sensor	-
2	HUP			Platen open detection terminal	IN
3	24VH			24V power terminal	OUT
4	24VH			24V power terminal	OUT
5	24VH			24V power terminal	OUT
6	24VH			24V power terminal	OUT
7	HD			Head data output terminal	OUT
8	/STB2	/STB3	/STB2	Head strobe signal terminal	OUT
9	/STB3	/STB4	N.C.	Head strobe signal terminal	OUT
10	5V			5V power terminal	OUT
11	24VH_GND			Power ground terminal	-
12	24VH_GND			Power ground terminal	-
13	24VH_GND			Power ground terminal	-
14	24VH_GND			Power ground terminal	-
15	24VH_GND			Power ground terminal	-
16	24VH_GND			Power ground terminal	-
17	24VH_GND			Power ground terminal	-
18	24VH_GND			Power ground terminal	-
19	24VH_GND			Power ground terminal	-
20	24VH_GND			Power ground terminal	-
21	TMP			Head temperature detection terminal	IN
22	/STB1			Head strobe signal terminal	OUT
23	N.C.	/STB2	N.C.	Head strobe signal terminal	OUT
24	/LAT			Head latch output terminal	OUT
25	HCLK			Head clock output terminal	OUT
26	HDR			Head data input terminal	IN
27	24VH			24V power terminal	OUT
28	24VH			24V power terminal	OUT
29	24VH			24V power terminal	OUT
30	24VH			24V power terminal	OUT

(5) Connector (CN6) (Paper feed motor connector)

Connector part number: 52610-1071 (Molex) or equivalent

No	Signal	Contents	Direction
1	N.C.	Not connected	-
2	MTMP	Motor temperature detection terminal	IN
3	GND	Ground terminal for motor moisture detection	-
4	MTA	Transport motor A excitation signal terminal	SINK/SOURCE
5	MT/A	Transport motor /A excitation signal terminal	
6	MTB	Transport motor B excitation signal terminal	
7	MT/B	Transport motor /B excitation signal terminal	
8	PSEK	Paper sensor cathode terminal	IN
9	SVCC	Paper sensor power terminal	OUT
10	/PES	Paper sensor output terminal	IN

(6) Connector (CN7) (Cutter motor connector)

Connector part number: B4B-PH-SM4-TBT (LF) (J.S.T.) or equivalent
Mating connector part number: PHR-4 (J.S.T.) or equivalent

No	Signal	Contents	Direction
1	CHPS	Home position detection terminal	IN
2	GND	Ground terminal for home position detection	-
3	MT+	Cutter motor drive signal +terminal	SINK/SOURCE
4	MT-	Cutter motor drive signal -terminal	

(7) Connector (CN8) (Near end sensor connector)

Connector part number: BM03B-SRSS-TBT (LF) (SN) (J.S.T.) or equivalent
Mating connector part number: SHR-03V-S-B (J.S.T.) or equivalent

No	Signal	Contents	Direction
1	N_SVCC	Power terminal for near end detection sensor	OUT
2	NSEK	Near end detection cathode terminal*1	IN
3	/NES	Near end detection terminal	IN

*1: It can be made into a terminal when using a mechanical switch for a near end sensor. For details: 'section E interface specifications, 3. external control signals specifications' and 'Appendix 6. Example of using external control signal' are referrred to.

2. RS-232C interface circuit board (FTP-629DSL350#10-R)

(1) Connector (CN1) (Control board connection connector)

Connector part number: 52746-1071 (Molex) or equivalent

No	Signal	Contents	Direction
1	FG	Frame ground	-
2	3.3V_GND	Signal ground	-
3	/ATF	Paper feed signal	OUT
4	/INPRM	Initialization request signal	OUT
5	/SLCTIN	Detection function setting signal	OUT
6	CMOS_DSR	Data set ready (communication between control board)	OUT
7	CMOS_RXD	Receive data (communication between control board)	OUT
8	CMOS_DTR	Data terminal ready (communication between control board)	IN
9	CMOS_TXD	Transmission data (communication between control board)	IN
10	3.3V	3.3V power supply	IN

(2) Connector (CN2) (RS-232C interface connector)

Connector part number: S9B-ZR-SM4A-TF (LF) (SN) (J.S.T.) or equivalent

Mating connector part number: ZHR-9 (J.S.T.) or equivalent

No	Signal	Contents	Direction
1	FG	Frame ground	-
2	RXD	Receive data	IN
3	TXD	Transmission data	OUT
4	RTS (DTR)	Request to send (data terminal ready)	OUT
5	3.3V_GND	Signal ground	-
6	CTS (DSR)	Clear to send (dataset ready)	IN
7	/SLCTIN	Detection function setting signal	IN
8	/INPRM	Initialization request signal	IN
9	/ATF	Paper feed signal	IN

■ COMMANDS

Command	Content
HT	Moves print position to the next tab
LF	Line feed
FF	Feeds forms (new page)
ESC EM+n	Setting the amount of the feeding at automatic paper feed
ECS RS	Sets reverse printing
ESC US	Resets reverse printing
ESC SP+n	Print mode specification
ESC ! + n	Sets print mode
ESC % + n	External registration character specification/cancellation
ESC & +y+c1+c2+x+d1to dn	External registration character definition
ESC *+m+n1+n2+d1+dN	Sets bit image mode
ESC -+n	Underline setting
ESC 2	Sets 1/6 inch line feed length
ESC 3+n	Sets the line feed length
ESC ? + n	External registration character deletion
ESC @	Printer initialization
ESC A+n	Sets the space between the line
ESC C+n	Sets the page length by character line
ESC D+d1+dN +NUL	Sets the tab position
ESC J+n	Feeds paper in forward direction and prints
ESC K+n	Reverse paper feed
ESC R+n	Selects international character
ESC V+n	Right Rotation 90° specification / cancellation
ESC X+n+m	Setting the turning time of the motor excitation
ESC c+1+n	Sets internal processing
ESC c+5+n	Panel switch enable/disable setting
ESC d+n	Printing and n-line feeding
ESC e+n	Prints and reverse feeds n-lines
ESC i	Full cut
ESC m	Partial cut
ECS s+n	Sets printing speed

Commands continued

Command	Content
ECS t+n	Character code table selection
ESC {+n	Sets/resets upside down printing
ESC DEL + n	Flash memory erase
FS !+n	Kanji printing mode collective specification*1
FS &	Kanji printing mode specification*1
FS*+m+n1+n2+d1 to dn	High speed collective image printing specified
FS -+n	Kanji underline specification/cancellation*1
FS .	Kanji printing mode cancellation*1
FS 2+c1+c2+d1 to dn	External character definition
FS 9+n	Sets the detection functions
FS C+n	Kanji code system selection*1
FS E+n	Correction of impressed energy
FS S + n1 + n2	Kanji spacing setting*1
FS W+n	Kanji double height and width printing specification/cancellation*1
FS r+n	Parameter transmission (serial mode)*2
GS ! +n	Character size specification
GS &+m+x1+xxy1+y2+d1 to dn	Registered image definition
GS '+m+n	Registered bit image printing
GS(+E+L1+L2+fn+d1 to d9)	RS-232C communication setting*2
GS + EL1+L2+fn+a+d1~dn	Sensor switch setting
GS <	Line feeds to the next mark.
GS A+m+n	Sets the line feed length after mark detection.
GS E+n	Sets print quality
GS L+ n1 + n2	Left margin positions setting.
GS V+n+m	Paper cutting (this command is only available for chip)
GS W + n1 + n2	Print area width setting
GS a+n	Setting and cancellation of auto status transmission (serial mode)
GS e+m+n	Bar code width magnification setting
GS h+n	Sets bar code height
GS k+m+k1 to k6 + d1 +dn	Prints PDF417 2-D barcode
GS w+n	Sets bar code width

*1: These Kanji commands are valid with Flash models.
*2: Only RS-232C Interface model.

Commands continued

Command	Content
GS k+m+k1+k2+k3+k4+p+d1 to dn+NUL	Print 2-D code (QR)
GS k+m+k1+k2+k3+k4~nL+nH+d1 to dn	Print 2-D code (PDF 417)

■ OPTIONS

1. Cables

Name		Part Number	Cable length
Interface cable (board to mechanism)	USB	FTP-629Y301	500mm (19.7 inch)
	RS-232C	FTP-629Y302	500mm (19.7 inch)
Power supply cable	logic, head, motor	FTP-629Y603	300mm (11. 8inch)

2. Driver LSI of Control Board

Name	Part Number	Quantity / Tray	Remarks
MCU	FTP-629CU301	84	On-board Flash and SRAM

3. Paper holder

Name	Part number
Paper Flange	FTP-040HF
Paper Stand	FTP-040HS

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