FUJITSU

INTERFACE BOARDS
FOR 24V FTP-60A SERIES
FTP-62ADSL000 SERIES

■ HIGHLIGHTS

- 24V FTP-60A series I/F board for 2-, 3- and 4-inch mechanisms
- Supports serial (RS-232C) or USB (V.2.0) I/F
- Supports 2-D bar codes and graphics
- Windows®2000/XP/Vista, Linux, OPOS drivers, CE 5.0
- UL File No. E171434
- RoHS compliant

■ PART NUMBERS

Part Number	Interface Type	Cutter Control	DIP Switch	Remarks	Mechanism Part Number
FTP-62ADSL000	USB / RS-232C	Yes	Yes	Evaluation board only	All part numbers
FTP-62ADSL001	USB	Yes	No	USB printer	FTP-63AMCL001 FTP-63AMCL011 FTP-63AMCL401 FTP-63AMCL411
FTP-62ADSL011	Serial	Yes	No	RS-232C	
FTP-62ADSL021	USB	Yes	No	USB com	
FTP-62ADSL002	USB	Yes	No	USB printer	FTP-63AMCL101 FTP-63AMCL111 FTP-63AMCL301 FTP-63AMCL311
FTP-62ADSL012	Serial	Yes	No	RS-232C	
FTP-62ADSL022	USB	Yes	No	USB com	

PRELIMINARY

■ INTERFACE SPECIFICATION AT HOST SIDE

Item	Specifications	
RS-232C	Data speed: Synchronous method: Handshake: Input/output level:	460.8k / 230.4k / 115.2k / 19.2k / 9.6k / 4.8k bps Full duplex DTR/DSR, XON/XOFF control RS-232C
USB V1.1	Data speed: Data input/output method:	Full speed 12Mbps Referential data input/output

■ DIP SWITCH SETTING DSW1

Bit No.	Setting Function	OFF	ON	Shipment setting
1	Communication setting	USB printer	USB com	OFF
2	Cutter type setting	Slide cutter	Rotary cutter	OFF*1

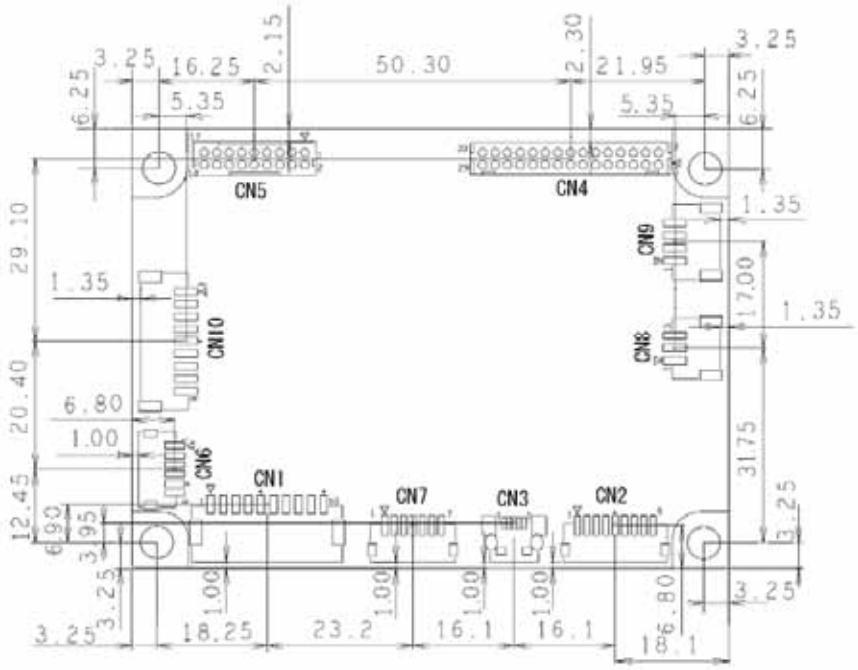
Note: *1: Please change to the setting for the mechanism used. Mechanism might malfunction when using the wrong setting.

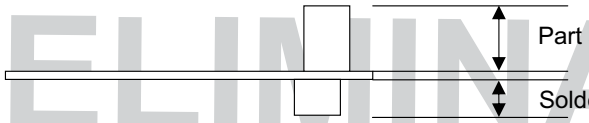
Downloaded from Elcodis.com electronic components distributor

■ DIMENSIONS

1. External specifications

1.1 External view of control circuit board





PRELIMINARY

Unit: mm

1.2 Control circuit board connector types

Symbol	Name	Function	Type case	Manufacturer
CN1	Power supply connector	To connect +24V power supply	SM10B-PASS-TBT (LF)(SN)	JST
CN2*1	RS-232C I/F control signal connector	To connectRS-232C interface & control signals	S9B-ZR-SM4A-TF (LF)(SN)	JST
CN3 *1	USB I/F connector	To connect USB interface	51387-0530	Molex
CN4	Thermal head connector	To connect thermal head	B30B-PHDSS (LF)(SN)	JST
CN5	Paper feed & cutter connector	To connect paper feed motor & cutter motor	LY20-18P-DL1-P5E	JST
CN6 *1	Drawer kick connector	To connect drawer kick	S6B-ZR-SM4A-TF (LF)(SN)	JST
CN7	Operation panel connector	To connect operation panel	S7B-ZR-SM4A-TF (LF)(SN)	JST
CN8	Near end sensor connector	To connect near end detection switch	S3B-PH-SM4-TB (LF)(SN)	JST
CN9	External sensor connector	To connect external detection switch	S4B-PH-SM4-TB (LF)(SN)	JST
CN10 *2	---	---	---	

Notes: *1: Depends on the board type *2: not mounted

Downloaded from Elcodis.com electronic components distributor

1. Connector for Head, Motor Power Supply (CN1)

Connector part number: *SM10B-PASS-TBT (J.S.T) or equivalent (P.C.B. side)
Mating connector: PAP-10V-S (J.S.T) or equivalent (P.C.B. side)

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	+24V	I	Power for head	2	+24V	I	Power for head
3	+24V	I	Power for head	4	+24V	|	Power for head
5	+24V	|	Power for head	6	GND	-	Ground
7	GND	-	Ground	8	GND	-	Ground
9	GND	-	Ground	10	GND	-	Ground

■ INTERFACE

2. RS-232C standard

(1) Connector (CN2)

Connector part number : S9B-ZR-SM4A-TF (J.S.T.) or equivalent
Mating connector part number : ZHR-9 (J.S.T.) or equivalent

(2) Connector pin assignment

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	FG	-	Frame ground	2	RD	I	Receive Data
3	TD	O	Transmission data	4	DTR	O	Data terminal ready
5	GND	-	Signal ground	6	DSR	I	Data set ready
7	$\overline{\text{SLCTIN}}$	I	Printer select	8	$\overline{\text{INPRM}}$	I	Reset
9	$\overline{\text{AFT}}$	I	Paper feed request				

PRELIMINARY

3. USB standard

(1) Connector (CN3)

Connector part number: 51387-0530 (Molex)
Mating connector part number: UX40-MB-5P (Hirose)

(2) Connector pin assignment

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	VBUS	I	Bus Power Supply	2	D-	I/O	Differential data-
3	D+	I/O	Differential data+	4	N.C.	-	No connection
5	GND	-	Signal ground				

Notes:

- Symbol "——" means a negative logic signal.
- "I" or "O" means a signal direction from the interface board side.

Downloaded from Elcodis.com electronic components distributor

■ CONNECTOR PIN ASSIGNMENT OF CONTROL BOARD (FPC)

1. Thermal head control circuit side (CN4)

Control circuit side: B30B-PHDSS (LF) (SN) JST)
Mechanism side: PHDR-30VS (J.S.T)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	VH	O	Head drive power	2	VH	O	Head drive power
3	VH	O	Head drive power	4	VH	O	Head drive power
5	DI 1	I	Data out 1	6	DO 1	O	Data in 1
7	GND	-	Head ground	8	GND	-	Head ground
9	GND	-	Head ground	10	GND	-	Head ground
11	GND	-	Head ground	12	STB 1	O	Strobe 1
13	CLK	O	Clock	14	$\overline{\text{LAT}}$	O	Data latch
15	Vdd	O	Logic	16	GND	-	Ground
17	TH	I	Thermistor	18	STB 2	O	Strobe 2
19	GND	-	Ground	20	GND	-	Ground
21	GND	-	Ground	22	GND	-	Ground
23	DI 2	I	Data out 2	24	DO 2	O	Data in 2
25	VH	O	Head drive power	26	VH	O	Head drive power
27	VH	O	Head drive power	29	VH	O	Head drive power
29	N.C.	-	Not connected	30	N.C.	-	Not connected

PRELIMINARY

2. Motor, Sensor (CN5)

Control circuit side: LY20-18P-DL1-P5E (JAE)
Mechanism side: LY10-DC18 (JAE)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	MT A	I/O	Motor excitation signal A (cutter)	2	MT $\overline{\text{B}}$	I/O	Motor excitation signal $\overline{\text{B}}$ (cutter)
3	MT B	I/O	Motor excitation signal B (cutter)	4	MT $\overline{\text{A}}$	I/O	Motor excitation signal $\overline{\text{A}}$ (cutter)
5	SVCC	O	Power supply for photointerrup-tor	6	CHP	I	Cutter photointerruptor (emitter)
7	CSEK	I	Cutter photointerruptor (cathode)	8	GND	-	Ground
9	TH	I	Thermistor	10	PSEK	I	Paper detection photointerruptor (cathode)
11	MT A	I/O	Motor excitation signal A (paper)	12	$\overline{\text{PES}}$	I	Paper detection photointerruptor (emitter)
13	MT $\overline{\text{B}}$	I/O	Motor excitation signal $\overline{\text{B}}$ (paper)	14	SVCC	O	Power supply for photointerruptor
15	MT B	I/O	Motor excitation signal B (paper)	16	SEK	I	Lever detection photointerruptor (cathode)
17	MT $\overline{\text{A}}$	I/O	Motor excitation signal $\overline{\text{A}}$ (paper)	18	HUP	I	Lever detection photointerruptor (emitter)

■ INTERFACE COMMAND OPTIONS

Please refer to the FTP-62ADSL series datasheet

Downloaded from Elcodis.com electronic components distributor

CONNECTOR PIN ASSIGNMENT OF INTERFACE BOARD

3. Connector for Drawer Kick (CN6)

Board side: S6B-ZR-SM4A-TF (J.S.T)
Remote side: ZHR-6 (J.S.T.)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	Power supply +24V	O	Drawer kick	2	Drawer kick1 control	|	Drawer kick1 control
3	Drawer kick2 control	|	Control Z terminal	4	Drawer kick1 sensor	|	Drawer kick2 control
5	Drawer kick1 sensor	|	Sensor2	6	+3V GND	-	Ground terminal for sensor

4. Connector for Operation Panel (CN7)

Connector part number: S7B-ZR-SM4A-TF (J.S.T) or equivalent
Mating connector: ZHR-7 (J.S.T.)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	$\overline{\text{ATF}}$	|	Motor Phase A	2	$\overline{\text{IMPRM}}$	|	Reset
3	$\overline{\text{SLCTIN}}$	|	Motor Phase B	4	3V GND	-	Logic ground
5	LED1	O	LED 1 output	6	LED2	O	LED 2 output
7	3.3V	O	Logic power				

5. Connector for Paper Near-End Sensor (CN8)

Connector part number: *B3B-PH-SM4-TB (J.S.T) or equivalent (P.C.B. side)
Mating connector: PHR-3

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	+3V	O	Power for logic	2	NC	-	Not connected
3	$\overline{\text{NES}}$	|	Paper near end signal				

PRELIMINARY

6. Connector for External I Sensor (CN9)

Connector part number: B4B-PH-SM4-TB (J.S.T.) or equivalent

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	+3V	O	Logic for Power	2	SEK	|	Paper Near End Signal
3	SENS	|	Paper Near End Signal	4	SVCC	O	Paper Near End Signal

7. Connector for Presenter (CN10)

Connector part number: SM09B-SRSS-TB (J.S.T.) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1			tbd	2			tbd
3			tbd	4			tbd
5			tbd	6			tbd
7			tbd	8			tbd
9			tbd				tbd

Downloaded from Elcodis.com electronic components distributor

COMMANDS

Command	Contents
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.
ESC FF	Data printing in page print mode.
ECS RS	Sets reverse printing.
ESC US	Resets reverse printing.
ESC SP+n	Character spacing setting.
ESC ! + n	Sets print mode.
ESC $+n1+n2	Absolute position specification.
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 settting.
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 E +n	Highlighted printing specification/cancellation.
ESC J+n	Feeds paper in forward direction and prints.
ESC K+n	Reverse paper feed.
ESC L	Page printing mode selection.
ESC Q + n +! + j	Frame overlay function (page mode selection)
ESC R+n	Selects international character.
ESC S	Line printing mode.
ESC T + n	Page print mode print direction setting.
ESC V+n	Right Rotation 90° specification / cancellation.

PRELIMINARY

Downloaded from Elcodis.com electronic components distributor

Command	Contents
ESCW+x1+x2+y1+y2+d1+dX1+dX2+dY1+dy2	Page print mode print area setting
ESC X+n+m	Setting the turning time of the motor excitation.
ESC Y+01n+ESC	Program download.
ESC Y+n1+n2	Horizontal position setting.
ESC a+n	Position alignment.
ESC c+1+n	Sets internal processing.
ESC c+5+n	Paper feed key valid/invalid setting.
ESC d+n	Printing and n-line feeding.
ESC e+n	Prints and reverse feeds n-lines.
ESC r+n+t1+t2	Specified pulse generation.
ESC s+n	Sets printing speed.
ESC t+n	Character code table selection.
ESC v	Paper detector status transmission.
ESC {+n	Sets/resets upside down printing.
FS !+n	Kanji printing mode collective specification.
FS &	Kanji printing mode specification.
FS*+m+n1+n2+d1 to dn	High speed collective image printing specified.
FS -+n	Kanji underline specification/cancellation.
FS .	Kanji printing mode cancellation.
FS 2+c1+c2+d1 to dn	External character definition.
FS 9+n	Sets the detection functions.
FS C+n	Kanji code system selection.
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
FS r+n*1	Parameter transmission (serial mode).
GS$+n1+n2	Horizontal position setting.
GS !+n	Character size setting.
GS &+m+x+y1+y2+d1 to dN	Registered bit image definition.
GS '+m+n	Registered bit image printing.
GS *+x+y+d to dx	Registered bit definition.

PRELIMINARY

Downloaded from Elcodis.com electronic components distributor

Command	Contents
GS/+m	Registered bit image printing.
GS :	Macro definition start /end.
GS <	Line feeds to the next mark.
GE f+n	HRI character font selection.
GS h+n	Barcode height setting.
GS k+m+n+d1~dn	Barcode printing (number of characters specification mode).
GS k+m+n+d1~dk+NUL	Bar code printing (Nul end mode).
GS k+m+k1+k2+k3+k4+ {[p1]}[d(1,1)]~[d(1,j)]}~{[pi] [d(i,1)]~[d(i,j)]}[00]h	QR two dimensional code printing.
GS k+m+k1+k2+k3+k4+k5;d1~dn	Maxi two dimensional code printing.
GS k+m+k1+k2+k3+k4+k5+k6+d1~dn	PDF 417 two dimensional code printing.
GS r+n	Peripheral status transmission.
GS v	Control board information transmission.
GS w+n	Barcode horizontal size setting.
GS (+C+n1+n2+m+fn+b+d1~dn)	Printer customize.
GS A+m+n	Sets the line feed length after mark detection.
GS B+n	Angle setting of bar code.
GS E+n	Sets print quality.
GS H+n	HRI character print position selection.
GS L+Nn+n2	Left margin setting.
GS M+n	Mark detection correction.
GS V+n+m	Paper cutting (this command is only available for chip).
GS Wn1+n2	Setting and cancellation of auto status transmission (serial mode).
GS Y+n1+n2	Character vertical absolute position setting.
GS a+n	HRI character font selection.
GS e+m+n	Sets bar code height.

*1: These commands are valid with FTP-62ADSL series.

PRELIMINARY

Downloaded from Elcodis.com electronic components distributor

OPTIONS

1. Cables

Name		Part Number	Length (mm)
Operation Panel	(CN7)	FTP-627Y203	500 (19.7 inches)
InterfaceCable(between board and equipment)	RS232C (CN2)	FTP-629Y302	500 (19.7 inches)
	USB (CN3)	FTP-629Y301	1000 (34.4 inches)
Extension Cables	Head (CN4)	FTP-62AY001	300 (11.8 inches)
	Platen,cutter,motor(CN5)	FTP-62AY003	300 (11.8 inches)
Power Supply Cable	Logic, head, motor (CN 1)	FTP-62AY601	300 (11.8 inches)

2. Driver LSI of Control Board

Name	Part Number	Quantity / Tray	Remarks
ROM	FTP-62ASR201	96	
MCUandSRAM	MB91302A	-	

3. Paper holder

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

PRELIMINARY

Fujitsu Components International Headquarter Offices

Japan
Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141 8630, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@fcl.fujitsu.com
Web: www.fcl.fujitsu.com

North and South America
Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: components@us.fujitsu.com
Web: http://us.fujitsu.com/components/

Europe
Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: emea.fujitsu.com/components/

Asia Pacific
Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: http://www.fujitsu.com/sg/services/micro/components/

©2012 Fujitsu Components America, Inc. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.
Fujitsu Components America or its affiliates do not warrant that the content of datasheet is error free. In a continuing effort to improve our products Fujitsu Components America, Inc. or its affiliates reserve the right to change specifications/datasheets without prior notice.
Rev. September 10 , 2012.

Downloaded from Elcodis.com electronic components distributor