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

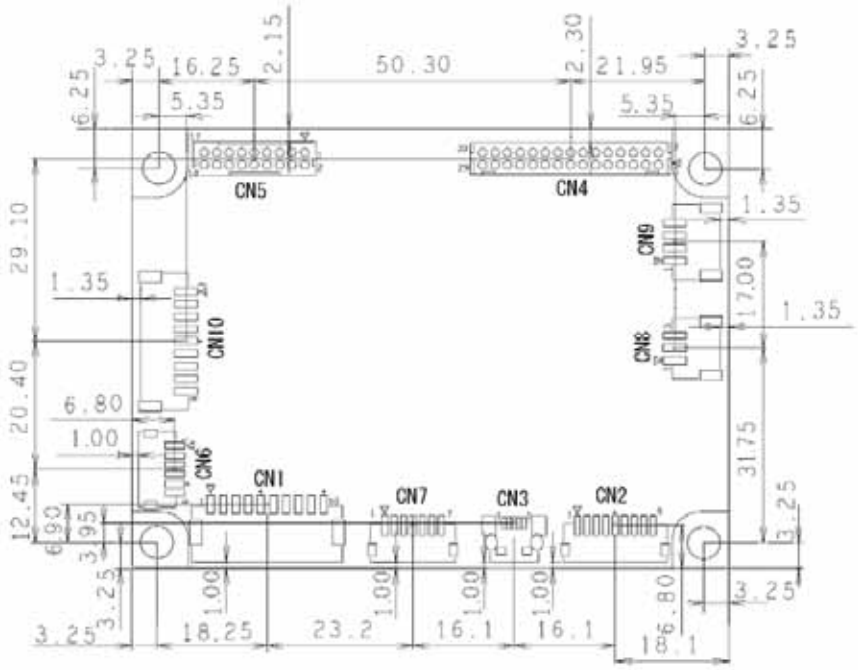
Bit No.	Setting Function	OFF	ON	Shipment setting
1	Communication setting	USB printer	USB com	OFF
2	Cutter type setting	Slide cutter	Rotary cutter	OFF*1

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

■ 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

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.

■ 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	$\overline{LAT}$	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

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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 $\overline{B}$	I/O	Motor excitation signal $\overline{B}$ (cutter)
3	MT B	I/O	Motor excitation signal B (cutter)	4	MT $\overline{A}$	I/O	Motor excitation signal $\overline{A}$ (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	$\overline{PES}$	I	Paper detection photointerruptor (emitter)
13	MT $\overline{B}$	I/O	Motor excitation signal $\overline{B}$ (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 $\overline{A}$	I/O	Motor excitation signal $\overline{A}$ (paper)	18	HUP	I	Lever detection photointerruptor (emitter)

■ INTERFACE COMMAND OPTIONS

Please refer to the FTP-62ADSL series datasheet

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

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.

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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

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.

PRELIMINARY

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

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

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