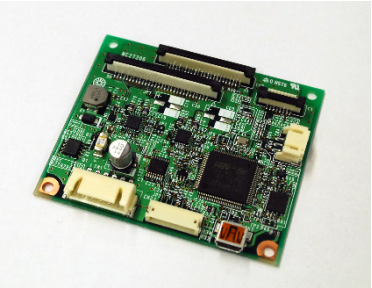
Thermal Printer
FTP-627DSL441-R series
Interface Board

Interface board for the FTP-607 series

Features

- USB (full speed) and RS-232C serial interface
- Selectable two font type from 24 dots system character and 16 dots system character
- Equipped with various detection functions, alarm functions and protective functions
- Print quality stabilization by thermal head temperature and power supply voltage monitoring
- Supports auto cutter



FTP-627DSL441-R

Part numbers

Part number	Supply voltage	Interface type	Mechanism part numbers
FTP-627DSL441-R	24VDC	USB/RS-232C	FTP-627MCL400, FTP-627MCL410, FTP-637MCL400, FTP-637MCL410, FTP-637MCL420, FTP-637MCL430

Note: Set for the mechanism to be used by command. Default setting is for FTP-627MCL400.

Interface specifications at host side

Item	Specifications
RS-232C	Data speed: 9,600 / 19,200 / 38,400 / 115,200 / 230,400 Mbps* Synchronous method: Asynchronous, full-duplex communication Handshake: RTS (DTR) / CTS (DSR) control, XON/XOFF control* Output level: RS-232C level
USB Ver. 2.0	Transmission rate: Full speed, (12 Mbps max.) Data input/output method: Differential

*: Changeable setting by command. Default setting is 19,200 Mbps.

■ Specifications

Item	Specifications
Dimension	70 x 60 x 14.2mm (W x D x H)
Weight	Approx. 22g

■ Print/paper feed specifications

Item			Specifications
Part number			FTP-627DSL441-R
Power supply			24VDC ±10%
Printing speed			200mm/s max. *1
Printing specifications	Printing mode		Line mode, page mode
	Character types		Kanji, non-kanji: 6,879 Traditional Chinese: 13,503 Alphanumeric and katakana: 159 International and special characters: 195 OCR: 229 Enlarged characters: 12 Download: 224 External characters: 94
	Character structure *2		8 x 16 dots, 12 x 24 dots, 16 x 16 dots, 24 x 24 dots, 24 x 40 dots, 24 x 48dots, 36 x 60dots
	Barcode	1D	UPC-A, UPC-E, JAN(EAN)13, JAN(EAN)8 , CODE39 , ITF, CODABAR, CODE128, GS1 DataBar-14, GS1 DataBar-14 Truncated, GS1 DataBar Limited
		2D	QR Code, GS1 DataBar-14 Stacked, GS1 DataBar-14 Omnidirectional, GS1 DataBar Expanded
	Bit image	Size	Horizontal: 8 to 432 dots (2-inch), 8 to 576 dots (3-inch), Vertical: 1 to 1,023 dots
		Modification	Black-white reversed
	Download image	Size	Horizontal: 8 to 432 dots (2-inch), 8 to 576 dots (3-inch), Vertical: 1 to 512 dots
		Modification	Black-white reversed, double width size, double height size, quadruple size, upside down
Detection function			Mark, paper, near end, thermal temperature, power supply irregularity, platen open, cutter irregularity, transmission data irregularity, hardware irregularity, MCU operation irregularity, thermal head's thermal runaway, thermal head's cable disconnection, non-volatile memory irregularity, RAM irregularity
Environment	Operating temperature/ humidity		0 to +50°C (guarantee: +5 to +40°C with Meiko Electronic Components recommended thermal paper) 20 to 85%RH (no condensation)
	Storage temperature/ humidity		-20 to +60°C (excluding paper), 5 to 90%RH (no condensation)

*1: Depending on embedded characters
*2: When using FTP-627MCL411-R. Please refer to the mechanism datasheets for speeds when using a different mechanism.

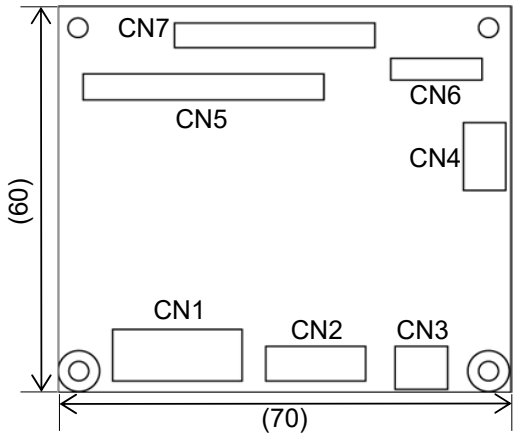
■ Cables (optional)

Item		Part number	Length
Interface cable	USB	FTP-629Y301#01-R	1m
	RS-232C	FTP-628Y302-R	0.5m
Power supply cable		FTP-629Y601-R	0.3m

■ Drive tip (optional)

Item	Part number
LSI for driving	FTP-627CU441-R
Font memory (JIS Kanji/Traditional Chinese)	FTP-628SR651-R

■ Dimensions



Unit: mm
( ): Reference

■ Control circuit board and connector types

Symbol	Name	Function	Note
CN1	Power supply connector	To connect +24V power supply	-
CN2	RS-232C I/F connector	To connect RS-232C interface	-
CN3	USB connector	To connect USB interface	-
CN4	Near end connector	I/O connection	-
CN5	3” printer mechanism connector	FPC connection	-
CN6	Cutter connector	FPC connection	-
CN7	2” printer mechanism connector	FPC connection	-

■ Connector pin assignment

• Power supply connector (CN1)

Mating connector part number: XHP-6 (J.S.T) or equivalent

Recommended cable: AWG#22 to #30, cable length 300mm maximum

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	V_P	I	Power input	2	V_P	I	Power input
3	V_P	I	Power input	4	GND	-	Head ground
5	GND	-	Head ground	6	GND	-	Head ground

■ RS-232C connector

• RS-232C connector (CN2)

Mating connector part number: ZHR-8 (J.S.T) or equivalent

Recommended cable: AWG#28 to #32, cable length 500mm maximum

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	RXD	I	Receive data signal	2	TXD	O	Transmit data signal
3	RTS (DTR)	O	Request to send signal	4	GND	-	Signal groud
5	CTS (DSR)	I	Clear to send signal	6	/SIN	I	Detection function setting signal
7	/RST	I	Initialization request signal	7	/ATF	I	Paper feed signal

■ USB connector

• USB connector (CN3)

Mating connector part number: USB mini-B type

Recommended cable: Cable conforming to USB standard (V2.0 full speed)

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	VBUS	I	VBUS signal	2	D-	I/O	D- signal
3	D+	I/O	D+ signal	4	NC	-	Not connected
5	GND	-	Ground signal	Shell	FG	-	Frame ground

■ Near end connector

Near end connector (CN4)

Mating connector part number: PHR-3 (J.S.T.) or equivalent

Recommended cable: AWG #28 to #32, cable length 300mm maximum

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	NVCC	O	Near end sensor power	2	/NES	I	Near end signal input
3	GND	-	Near end signal ground				

Note: Symbol “-” means a negative logic signal.
“I” or “O” means a signal direction from the interface board side

■ Connector for printer mechanism

• Connector (CN5, CN6, CN7)

Please refer to the printer mechanism specifications.

■ Commands

Command	Content
HT	Horizontal tab
LF	Line feed
FF	Feeds forms (new page)
ESC FF	Data print in page mode
ESC EM n	Auto loading amount setting
ESC RS	Sets reverse printing
ESC US	Resets reverse printing
ESC SP n	Character spacing setting
ESC ! n	Sets print mode
ESC $ nL nH	Horizontal absolute position setting
ESC % n	Download character specification/cancellation
ESC & y c1 c2 x d1~dn	Download character definition*1, 3
ESC * m nL nH d1~dk	Prints bit image
ESC - n	Undeline setting
ESC 2	Sets default line spacing
ESC 3 n	Sets the line feed length
ESC ? n	Download character deletion*1, 3
ESC @	Printer reset
ESC A n	Set the space between the line
ESC C n	Sets the page length by character line
ESC D n1~nk NUL	Set the tab position
ESC E n	Emphasis printing specification/cancellation
ESC J n	Feeds paper in forward direction and prints
ESC K n	Print and backward paper feed
ESC L	Page mode selection
ESC R n	Selects internationl character
ESC S	Line mode selection
ESC T n	Print direction setting in page mode
ESC V n	Right rotation 90° specification/cancellation
ESC W xL xH yL yH dxL dxH dyL dyH	Print area setting in page mode
ESC X m n	Setting the turning time of the motor excitation
ESC Y SOH ESC x a SYN d1~d2	Printer type setting
ESC ¥ nL nH	Horizontal relative position setting
ESC a n	Position alignment
ESC c 1 n	Sets internal processing
ESC c 5 n	External input signal valid/invalid setting
ESC d n	Printing and n-line feeding
ESC e n	Printing and n-line back forward feeding
ESC s n	Sets printing speed
ESC t n	Character code table selection
ESC { n	Sets/resets updside down printing
ESC DEL n	Nonvolatile memory deletion*1, 3

Command	Content
FS ! n	Kanji printing mode collective specification*2
FS &	Kanji printing mode specification*2
FS * m nL nH d1~dk	High-speed batch image print
FS - n	Kanji underline specification/cancellation*2
FS .	Kanji printing mode cancellation*2
FS 2 c1 c2 d1~dn	User defined character definition*1, 2, 3
FS 9 n	Sets the detection functions
FS C n	Kanji code system selection*2
FS E n	Correction of impressed energy
FS S n1 n2	Kanji spacing setting*2
FS W n	Specify/cancel double-tall, double wide Kanji characters*2
FS r n	Parameter transmission (serial mode)
GS ! n	Character size setting
GS $ nL nH	Vertical absolute position setting in page mode
GS & m x yL yH d1~dn	Download image definition*1, 3
GS ‘ m n	Download image print*3
GS (E pL pH fn a b8 ~ b1 (fn=3)	Memory switch setting*1
GS (E pL pH fn a (fn=4)	Memory switch transmission
GS (E pL pH fn d1~d9 (fn=67)	RS-232C communication setting*1, 4
GS (E pL pH fn d1 ~ d9 (fn=68)	USB communication setting*1
GS (E pL pH fn a n (fn=70)	Mark width setting*1
GS (K pL pH fn	Print control setting
GS (K pL pH fn n (fn=49)	Print density setting
GS (K pL pH fn n (fn=50)	Print speed setting*5
GS (K pL pH fn n (fn=97)	Number of head division 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 H n	HRI character printing position selection
GS L nL nH	Sets left margin
GS V m n	Cut paper
GS W nL nH	Print area width setting
GS ¥ nL nH	Vertical relative position setting in page mode
GS a n	Automatic status transmission setting
GS e m n	Bar code width setting
GS f n	HRI character font selection
GS h n	Bar code height setting
GS k m n d1 ~ dn	Bar code print
GS k m k1 k2 k3 k4 {p1 d(1,1)~d(1,j)}~ {pi d(i,1)~d(i,j)} NUL	QR code print
GS k m k1 k2 k3 k4 nL nH d1 ~ dn	PDF417 code print
GS k m n k pL pH d1 ~ dp	Bar code (GS1 DataBar) print
GS k m n k1 k2 k3 k4	Bar code (GS1 DataBar) setting
GS w n	Set bar code horizontal size

■ Commands notes

*1: Makes write/erase to the nonvolatile memory.
*2: Only the model equipped with the Kanji character corresponds
*3: Only the model equipped with the extended nonvolatile memory.
*4: This product unsupported 460.8kbps described in the command specification. Please use in the range of 9.6kbps to 230.4kbps. This command writes to the flash memory by parameters. Please see command specification.
*5: The relationship between Speed level and Print speed is shown in the table below.

Speed level	Print speed			
	FTP627MCL		FTP-637MCL	
	Standard	High speed	Standard	High speed
Level 1 ~ 7	not used	not used	not used	not used
Level 8	50mm/s	50mm/s	50mm/s	50mm/s
Level 9	60mm/s	60mm/s	60mm/s	60mm/s
Level 10	80mm/s	80mm/s	80mm/s	80mm/s
Level 11	100mm/s	100mm/s	100mm/s	100mm/s
Level 12	not used	125mm/s	not used	125mm/s
Level 13		150m/s		150mm/s
Level 14		175m/s		not used
Level 15		200m/s		

*6: The relationship between head division and simultaneous energizing dots is shown below.
Simultaneous energizing dots = Number of line dots / number of head division
(E.g. Number of line dots: 432 dots Number of head division: 4 Simultaneous energizing dots: 432 dots / 4= 108 dots)

Contact

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