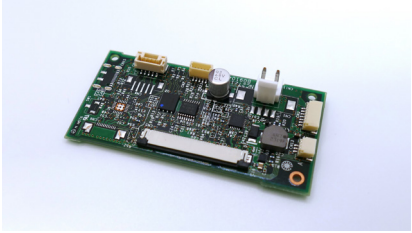
FCL Components Thermal Printer FTP-64GDSL231 Interface Board

FCL Components interface board for 24V FTP-64GMCL153 series

Features

- USB Ver. 2.0 (full speed) and RS-232C (max. 230.4kbps) serial interface
- Supports alphanumeric, Kanji, Kana, Thai, Traditional Chinese, registration of image patterns, various barcode printing
- Drivers Windows Vista® Windows® 7, 8, 10, 11
- RoHS compliant



FTP-64GDSL231

■ Part numbers

Part number	Supply voltage	Interface type	Mechanism part number
FTP-64GDSL231	24V	USB Ver. 2.0 RS-232C	FTP-64GMCL153

■ Interface specification at host side

Item	Specifications	
USB V2.0	Transmission rate: USB interface class:	Full speed 12Mbps max. Device class: Printer device
RS-232C	Data speed: Synchronous method: Handshake: Output level:	9,600 / 230,400 / 115,200 / 38,400 / 19,200 bps* Asynchronous, full-duplex communication RTS (DTR) / CTS (DSR) control, XON/XOFF control* RS-232C level

Note: *It can be changed by RS-232C communication setting command " GS (+E(fn=67))

■ Accessories (optional)

Item		Part number	Connector	Length
Interface cable*	USB	FTP-62GY311#01	USB-A plug and GHR05V-S (J.S.T.)	1m
	RS-232C	FTP-62GY302	SHR-05V-S (-B) (J.S.T.) Connector equipped at one side	0.5m
Power supply cable*		FTP-629Y603	VHR-2 (J.S.T.) Connector equipped at one side	0.5m

Note: *Cables are RoHS compliant

■ Specifications

1.1 Base specifications

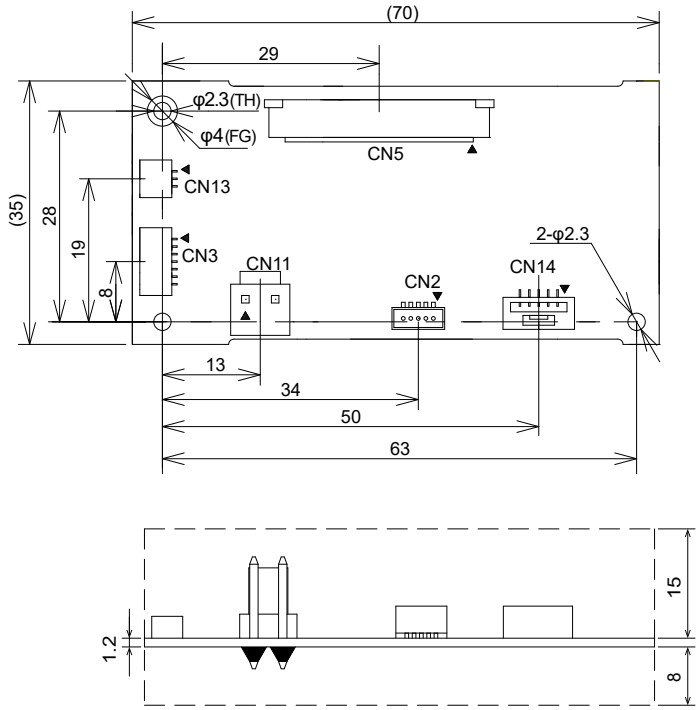
Item	Specifications
Dimensions	70 x 35mm
Weight	Approx. 15g

1.2 Print/paper feed specifications

Item			Specifications
Part number			FTP-64GDSL231
Communication interface			USB Ver.2.0 (full speed), RS-232C
Power supply			24VDC ±10%
Printing speed			Max. 200mm/sec.
Printing specifications	Printing mode		Line 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 External characters: 94 Thai code18: 128
	Character structure *1		8×16 dots, 12×24 dots, 16×16 dots, 24×24 dots, 24×40 dots, 24×48 dots, 36×60 dots
	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, GS1DataBar-14 stacked, GS1 DataBar-14 Omnidirectional, GS1 Databar-14 Expanded, PDF417
	Bit image	Size	Horizontal: 8 to 832 dots, vertical: 1 to 1023 dots
		Modification	Black-white reversed
	Download image	Size	Horizontal: 8 to 832 dots, vertical: 1 to 512 dots (Registration memory capacity : 192k bytes)
		Modification	Black-white reversed, double width size, double height size, quadruple size, upside down
Detection function			Mark, paper, near end, thermal head temperature irregularity, power supply irregularity, platen open, transmission data irregularity, hardware irregularity, MCU operation irregularity, thermal head's thermal runaway, thermal head's cable disconnection, non-volatile memory irregularity, RAM irregularity, motor temperature irregularity
Environment	Operating temperature/ humidity		0 to 50°C (guarantee: +5 to +40°C, with FCL Components recommended thermal paper) 20 to 85%RH (0 to +40°C, In the range of +40 to +50°C, gradual decrease up to 52%RH at 50°C, gradual decrease down to 12%RH at 50°C)(No condensation)
	Storage temperature/ humidity		-20 to +60°C (excluding paper), 5 to 90%RH (No condensation)
Mean time between failure (MTBF)			500,000 hours

*1: Depending on embedded characters

■ Dimensions



Unit: mm

■ Control circuit board and connector types

Symbol	Name	Function	Note
CN11	Power supply connector	To connect +24V power supply	-
CN2	RS-232C I/F connector	To connect RS-232C interface	-
CN3	External I/F connector	I/O	-
CN14	USB I/F connector	To connect USB	-
CN5	Head / motor connector	FPC connection	-
CN13	Near end connector	I/O connection	-

■ Connector Pin Assignment of interface board

Note: Symbol "-" means a negative logic signal.
"I" or "O" means a signal direction from the interface board side.(I: input, O: output)
Equipped connectors may be changed. Please check carefully when using equivalent connectors.

- Power supply connector (CN11)
  Mating connector part number: VHR-2N (J.S.T.) or equivalent
  Recommended cable: AWG#22 to 30, length max. 300mm

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	Vp	I	Power input	2	GND	I	Ground

- RS-232C connector (CN2)
  Mating connector part number: SHR-05V-S (-B) (J.S.T.) or equivalent
  Recommended cable: AWG#28 to 32, length max 500mm

No.	Signal	I/O	Content	No	Signal	I/O	Content
1	RXD	I	Receive data signal	2	TXD	O	Transmission data signal
3	RTS (DTR)	O	Request to send signal	4	GND	-	Signal ground
5	CTS (DSR)	I	Clear to send signal				

- External I/O connector (CN3)
  Mating connector part number: SHR-07V-S (J.S.T.) or equivalent
  Recommended cable: AWG#28 to 32, length max 300mm

No.	Name	I/O	Description	No.	Name	I/O	Description
1	/RST	I	Initialization request signal	2	/ATF	I	Paper feed signal
3	/SIN	I	Detection function setting signal	4	LED1	O	POWER LED signal
5	LED2	O	ERROR LED signal	6	N.C.	-	Not connected
7	GND	-	Signal ground				

- USB connector (CN14)
  Mating connector part number:GHR05V-S (J.S.T.) or equivalent
  Recommended cable: AWG#32 to 26, length max 1,000mm

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	GND	-	Signal ground
5	FG	-	Frame ground				

- Near end connector (CN13)
  Mating connector part number:SHR-03V-S (J.S.T.) or equivalent
  Recommended cable: AWG#28 to 32, length max 300mm

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				

- Head motor connector (CN5)
  Please refer to the printer mechniasm specifications

Command	Content
HT	Moves print position to the next 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	Black/white reverse printing specification
ESC US	Black/white reverse printing cancellation
ESC SP n	Character space 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	Bit image print
ESC - n	Undeline setting
ESC 2	Sets default line spacing
ESC 3 n	Line pitch setting
ESC ? n	Download character deletion *1, *3
ESC @	Printer reset
ESC A n	Line spacing setting
ESC C n	Sets the page length line mode
ESC D n1~nk NUL	Sets horizontal 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 ¥ nL nH	Horizontal relative position setting
ESC a n	Positional 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	Print and back forward feed paper n lines
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
FS ! n	Kanji printing mode collective specification *2
FS &	Kanji printing mode specification *2

Command	Content
FS * m nL nH d1~dk	High-speed batch image print
FS - n	Kanji underline specification/ancellation *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	Standard energy setting
FS S n1 n2	Kanji spacing setting *2
FS W n	Specify/cancel double-tall, double wide Kanji characters *2
FS r n	Reply parameter setting
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 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=72, a=1)	Language model setting *1
GS (E pL pH fn a (fn=72, a=1)	Language model transmission
GS <	Line feeds to the next mark
GS A m n	Sets the line feed length after mark detection
GS B n	Barcode angle setting
GS E n	Sets print quality
GS H n	HRI character printing position selection
GS L nL nH	Left margin setting
GS V m n	Cut paper
GS W nL nH	Sets print area width
GS ¥ nL nH	Vertical relative position setting in page mode
GS a n	Set auto status transmission
GS e m n	Sets bar code width
GS f n	HRI character font setting
GS h n	Barcode 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	Bar code width magnification setting

*1: Makes write/erase to the nonvolative 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.

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