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EPSON

USB Plus Power Interface Board

UB-U06

Specification

STANDARD	
Rev. No.	C
Notes	

Copied Date	
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REVISION SHEET

Sheet 1 of 2

The table below indicates which pages in this specification have been revised. Before reading this specification, be sure you have the correct version of each page.

Revisions		Design Section			Sheet Rev. No.						
Rev.	Document	WRT	CHK	APL	Sheet	Rev.	Sheet	Rev.	Sheet	Rev.	
A	Enactment	Noguchi	Watanabe	Ogasawara	I	A					
B	Change	Aruga		Yamaji	II	C					
C	Change	Watanabe	--	Osada	III	A					
					IV	A					
					1	B					
					2	A					
					3	C					
					4	A					
					5	A					
TITLE UB-U06 Specification (STANDARD)				Front Part				Contents	Appendix	Total	
				Cover	Rev. Sheet	Scope	General Description				Table of Contents
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REVISION SHEET

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REV.	SHEET	CHANGED CONTENTS
A	All	Newly enacted.
B	II	Cautions Added 8. (Notes on use of the product).
	1	1.2 Printers that Can Use the UB-U06 Changed "The UB-U06 can be installed in the TM printers listed below: • TM-H6000II with Image Scanner (Gray Scale Model)" to "The UB-U06 can be used for the TM series printers from which an interface board can be removed. Since some TM printers cannot use the UB-U06, see the TM-UIB Combination Specification for the latest restrictions on TM printers – UB-U06 combination."
C	II	Trademarks Changed "EPSON® is a registered trademark of Seiko Epson Corporation in the United States and other countries." to "EPSON is a registered trademark of Seiko Epson Corporation in Japan and other countries/regions."
	3	3.2 Connector Pin Assignments Table 3.1 Pin Assignments for USB Plus Power Upstream Connector (Pin No. 6) Signal name: Changed "NC" to "VBUS." Function: Changed "Unused" to "Power for signals."
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Points That Must be Observed To Assure Product Safety

To assure the safe operation of this product, carefully observe the specifications as well as the notes provided below.

Seiko Epson Corporation will not bear any responsibility for any damage or injuries arising from use of this product that is not in accordance with the specifications and the notes provided below.

- 1) Do not drop conductive materials, such as a paper clip or push pin, onto the circuit board.
Short circuiting pins on the board may cause heat damage due to excess current or may melt the bonding wire.
- 2) Be sure to connect the devices with the specified cables.
Improper connection may cause fire or shock.
- 3) Never disassemble or modify this product.
Tampering with this product may result in injury, fire, or electric shock.
- 4) Be sure to set this equipment on a firm, stable, horizontal surface.
Product may break or cause injury if it falls.
- 5) Do not use in locations subject to high humidity or dust levels.
Excessive humidity and dust may cause equipment damage, fire, or shock.
- 6) Do not place heavy objects on top of this product. Never stand or lean on this product.
Equipment may fall or collapse, causing breakage and possible injury.
- 7) To ensure safety, please turn the power of this product off prior to leaving it unused for an extended period.

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OVERVIEW

1. Application

This specification applies to the UB-U06.

2. Features

- 1) High-speed communication at 12M bps. (bps: bits per second)
- 2) Supports Plug & Play, Hot Insertion & Removal
- 3) The USB interface cable from the host PC supplies the printer's power as well as USB data.

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1. OVERVIEW

1.1 Structure

The USB interface board UB-U06 is installed in an EPSON TM series printer to provide the USB interface function.

1.2 Printers that Can Use the UB-U06

The UB-U06 can be used for the TM series printers from which an interface board can be removed. Since some TM printers cannot use the UB-U06, see the TM-UIB Combination Specification for the latest restrictions on TM printers – UB-U06 combination.

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2. MECHANICAL SPECIFICATIONS



Figure 2.1 External View of UB-U06

2.1 Connector

UB-U06 has a following type of connector:

- 1) Pin assignments: See Table 3.1.
- 2) Type: 69913-104 (FCI)

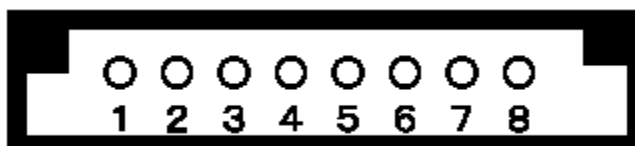


Figure 2.2 External View of the USB Plus Power Upstream Connector

2.2 Cable

The length of the cable must be less than 3.8 meters {12.5'} and as short as possible.

Design the case so that the frame ground must contact the SHELL of the cable connector and the host side connector properly.

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3. ELECTRICAL SPECIFICATIONS

3.1 USB Function

The specifications of this interface board conform to the USB specifications for the TM printer in which this board is installed.

3.2 Connector Pin Assignments

Table 3.1 Pin Assignments for USB Plus Power Upstream Connector

Pin No.	Signal name	Signal direction	Function
1	PG	--	Power ground
2	+24V	Input	Power for printer
3	SG	--	Signal ground
4	D+	Input/Output	USB data transmission
5	D-	Input/Output	USB data transmission
6	VBUS	--	Power for signals
7	+24V	Input	Power for printer
8	PG	--	Power ground

4. ENVIRONMENTAL CONDITIONS

1) Temperature	Operating:	0 to 50°C {32 to 122°F}
	Storage:	-10 to 50°C {14 to 122°F}
2) Humidity	Operating:	10 to 90% RH (no condensation)
	Storage:	10 to 90% RH (no condensation)

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5. EMI AND SAFETY STANDARDS APPLIED

1) Europe:

CE Marking

Directive 89/336/EEC

EN55022 Class A

EN55024

IEC61000-4-2

IEC61000-4-3

IEC61000-4-4

IEC61000-4-5

IEC61000-4-6

IEC61000-4-11

Note that the printers in which this board is installed do not conform to the following CE Marking:

Directive 90/384/EEC

• EN45501

2) North America

EMI FCC/ICES-003 Class A

3) Japan

EMI VCCI Class A

4) Oceania

EMC AS/NZS 3548 Class A

6. SETTING UP

6.1 Setting up the TM

When using this interface board, see the specification for each TM printer for these setup settings in detail.

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7. DRIVERS

7.1 Operation Environment

See each driver's manual.

7.2 Driver Structure

EPSON provides the following drivers.

- WDM USB device driver (class driver)
- Printer driver and USB port monitor
- OPOS driver for USB

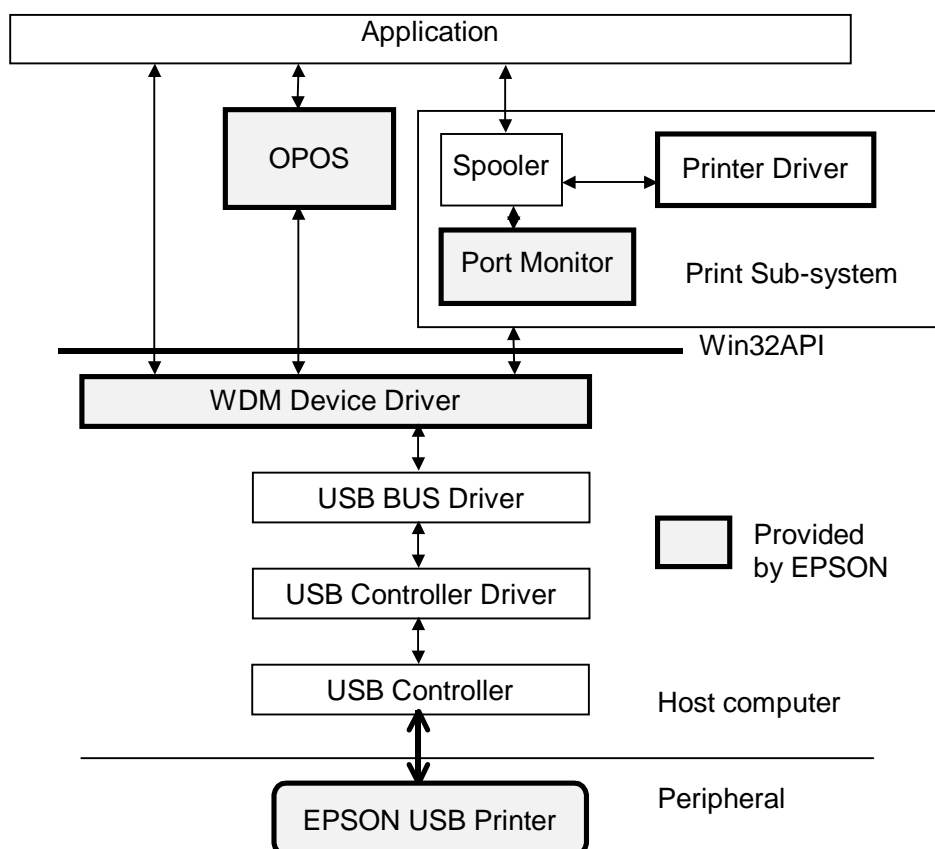


Figure 7.1 Driver Structure

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