# USER'S MANUAL

# PA-6610

Mini POS Terminal Powered by NVIDIA® Tegra®3 Platform

**PA-6610 M1** 

# PA-6610 POS System With LCD/Touchscreen

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# DISCLAIMER

This user's manual is meant to assist users in installing and setting up the system. The information contained in this document is subject to change without any notice.

# **CE NOTICE**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

**CAUTION!** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

**WARNING!** Some internal parts of the system may have high electrical voltage. And therefore we strongly recommend that qualified engineers can open and disassemble the system. The LCD and Touchscreen are easily breakable, please handle them with extra care.

# **TABLE OF CONTENTS**

# **CHAPTER 1 INTRODUCTION**

1-1	About This Manual	1-2
1-2	POS System Illustration.	1-3
1-3	System Specification.	1-5
1-4	Safety Precautions	1-8

# CHAPTER 2 SYSTEM CONFIGURATION

2-4 2-6
2-6
∠-0
2-23
2-28
2-31
2-34

# **CHAPTER 3 SOFTWARE UTILITIES**

3-1	Version List	3-2
3-2	OS API	3-4
3-3	Firmware Control Command	3-18
3-4	Utility Update	3-83
J- <del>-</del>	Ounty Opdate	

# CHAPTER A SYSTEM DIAGRAMS

Exploded Diagram for System Top Module	A-2
Exploded Diagram for MSR	A-6
Exploded Diagram for VFD	A-9
Exploded Diagram for Printer	A-12
Exploded Diagram for System Bottom Module	A -17

# chapter I

# **INTRODUCTION**

This chapter gives you the information for the PA-6610. It also outlines the system specifications.

Sections included:

- About This Manual
- POS System Illustration
- System Specifications
- Safety precautions

Experienced users can jump to chapter 2 on page 2-1 for a quick start.

# **1-1. ABOUT THIS MANUAL**

Thank you for purchasing our PA-6610 Series System. The PA-6610 is an updated system designed to be comparable with the highest performance of IBM AT personal computers. The PA-6610 provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the whole system. It contains four chapters and two appendixes. Users can configure the system according to their own needs.

#### **Chapter 1 Introduction**

This chapter introduces you to the background of this manual. It also includes illustrations and specifications for the whole system. The final section of this chapter indicates some safety reminders on how to take care of your system.

#### Chapter 2 System Configuration

This chapter outlines the location of motherboard components and their function. You will learn how to set the jumpers and configure the system to meet your own needs.

#### Chapter 3 Applications & Widgets

This chapter contains information of system applications and Widgets pre-installed in PA-6610.

### Appendix A System Diagrams

This chapter shows the exploded diagrams and part numbers of PA-6610 components.

# **1-2. POS SYSTEM ILLUSTRATION**

# **Top View**







# **Front View**

Side View



PA-6610 USER'S MANUAL

Page: 1-3

#### **Quarter View**



# **1-3. SYSTEM SPECIFICATIONS**

# MAINBOARD (PB-6810-G0A)

# System

CPU	NVIDIA <sup>®</sup> Tegra <sup>®</sup> 3		
Memory	DDR3 1GB		
OS Support	Android 4.1		
Power Supply	72 Watt power adapter		
Power Consumption	• System off: 2.2W		
	• System idle: 17.6W (Panel backlight is on)		
	• System running: 29.7W (Printer+ VFD + MSR)		
	<ul> <li>System full-loading: 46.2W (Printer + VFD + MSR + USB + COM)</li> </ul>		
Flash	eMMC 8GB		
SD	Standard SDHC (up to 32GB)		
Wireless LAN Signal	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		
	1M -26 dBm -42 dBm -25 dBm -39 dBm		
	3M -45 dBm -37 dBm -45 dBm -47 dBm		
	5M         -51 dBm         -46 dBm         -49 dBm         -54 dBm		
	10M -61 dBm -53 dBm -56 dBm -55 dBm		
	The above data are tested from the configuration of AP & POS system as follows (both are lain flat).		
	Angle: 0° Angle: 90° Angle: 180° Angle: 270°		
	AP		

PA-6610 USER 'S MANUAL

Page: 1-5

	1
VFD	20 columns & 2 lines.
	Each column allows 5x7 dots 1 <sup>st</sup> character to 20 <sup>th</sup>
	character speed: 360mm/sec.
MSR	JIS I & II; ISO I & II & III tracks, support i-Button
	reader.
Printer	2"/3" thermal printer with auto-cutter.
	• 2" speed: 200mm/sec.
	• 3" speed: 170mm/sec.
Color	Top: white/deep grey
	Bottom: deep grey
System Weight	• Without power adapter: 5 kg
	• With power adapter: 6 kg
Dimension (W x H x D)	315mm x 320mm x 160mm
Certificate	FCC/CE/LVD

# I/O Ports

Serial Port	• 1 x DB-9 (COM2)
	<ul> <li>1 x RJ45 (COM1), supports embedded VFD</li> </ul>
	• 3 x Wafer on board:
	- Co-lay COM2
	- COM4 supports embedded printer
	- COM5 supports embedded MSR
	<ul> <li>5/12V Selectable (COM1/2/5)</li> </ul>
USB	• 2 x USB2.0 (1 x USB Type A; 1 x Micro USB)
	• 1 x USB2.0 on side bezel (USB Type A)
LAN	1 x 10/100 Mbps
VGA	1 x DB-15 VGA Interface

# Display

LCD	10.4" TFT XGA
Max. Resolution	1024 x 768
Brightness	• Average: 180 cd/m <sup>2</sup>
	• Point 3: 200 cd/m <sup>2</sup>

	(Through touchscreen)
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Pixel Pitch	0.206 (W) x 0.206 (H)
Signal Interface	TTL (18-bit)
Tilt Angel	20.5~27.5°
Touch Panel	10.4" 5wire analog resistive

# Environment

Temperature	• Operation: 0~35°C (32~95°F)
	• Storage: -20~60°C (-4~140°F)
Humidity	10~90% (without frosting)

# **1-4. SAFETY PRECAUTIONS**

The following messages are safety reminders on how to protect your systems from damages, and extending the life cycle of the system.

#### 1. Check the Line Voltage

a. The operating voltage for the power supply should be within the range of 100V to 240V AC; otherwise the system may be damaged.

#### 2. Environmental Conditions

- a. Place your PA-6610 on a sturdy, level surface. Be sure to allow enough space around the system to have easy access needs.
- b. Avoid installing your PA-6610 Series POS system in extremely hot or cold places.
- Avoid exposure to sunlight for a long period of time (for example, in a closed car in summer time. Also avoid the system from any heating device.).
   Or do not use the PA-6610 when it has been left outdoors in a cold winter day.
- d. Bear in mind that the operating ambient temperature is between 0°C and 35°C (32°F and 95°F).
- e. Avoid moving the system rapidly from a hot place to a cold place, and vice versa, because condensation may occur inside the system.
- f. Protect your PA-6610 against strong vibrations, which may cause hard disk failure.
- g. Do not place the system too close to any radio-active device. Radio-active device may cause signal interference.
- h. Always shutdown the operation system before turning off the power.

### 3. Handling

- a. Avoid placing heavy objects on the top of the system.
- b. Do not turn the system upside down. This may cause the hard drive to malfunction.
- c. Do not allow any objects to fall into this product.
- d. If water or other liquid spills into the product, unplug the power cord immediately.

# 4. Good Care

- a. When the outside case gets stained, remove the stains using neutral washing agent with a dry cloth.
- b. Never use strong agents such as benzene and thinner to clean the surface of the case.
- c. If heavy stains are present, moisten a cloth with diluted neutral washing agent or alcohol and then wipe thoroughly with a dry cloth.
- d. If dust is accumulated on the case surface, remove it by using a special vacuum cleaner for computers.

# SYSTEM CONFIGURATION



Helpful information that describes the jumper and connector settings, component locations, and pin assignment.

Sections included:

- Jumper & Connector Quick Reference Table
- How to Set Jumpers
- Component Locations & Jumper Settings
  - Main Board (External I/O ports & other components)
  - Printer Board
  - VFD Board
  - MSR Board
  - Inverter Board

# 2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

# Main Board

JUMPER/CONNECTOR	NAME	PAGE
Power Button	SW1-2	2-7
DC In Port	DC_IN1	2-7
Cash Drawer Port	DRW1	2-8
COM Port	COM1, COM2	2-8
VGA Port	VGA1	2-9
USB Port	USB1, USB2, USB3	2-10
LAN Port	CN_LAN1	2-11
COM Connector	COM2-2, COM4, COM5, DEBUG-COM3	2-12
COM Port RI and Voltage Selection	JP_COM1, JP_COM2, JP_COM5, JP_DEBUG1	2-13
USB Connector	USB1-2, USB2-2, USB3-2	2-14
Cash Drawer Power Selection	JP5	2-15
SPI EEPROM Selection	JP8	2-15
Backlight Type Selection	JP1	2-16
Touch Function & USB Channel Selection	JP9, JP10	2-16
HSIC USB-CLK Selection	JP2, JP3	2-17
LED Connector	PWR_LED1-1	2-17
Power for Thermal Printer Connector	PRT_PWR1	2-18
External Speaker Connector	SPK1-1	2-18
Inverter Connector	INV1-1	2-18
LVDS Connector	LVDS1	2-19
Touch Panel Connector	TOUCH1-1	2-19
LAN EEPROM I/F Connector	EEPROM_CN1	2-20
Speaker Connector	DC12V_PWR1	2-20
Reset Button	RST_SW1	2-20
Volume Adjustor	VOL_N_SW1, VOL_P_SW1	2-21

Page: 2-2

PA-6610 USER'S MANUAL

JUMPER/CONNECTOR	NAME	PAGE
Recovery Button	SW4	2-21
Antenna Connector	JA1	2-22
SD Card Slot	SD_CARD1	2-22

# Printer Board

JUMPER/CONNECTOR	NAME	PAGE
Power Supply Connector	24V_CN1	2-24
Thermal Head/Motor/Sensor Connector	PRINT_CN1	2-24
RS-232 Interface Connector	COM1	2-26
Auto-cutter Connector	CUT_CN1	2-27

# VFD Board

JUMPER/CONNECTOR	NAME	PAGE
Power Switch Selection	JP12V_SEL1	2-29
Power Switch	CN2	2-29
RS-232 Serial Interface	CN1	2-30

# MSR Board

JUMPER/CONNECTOR	NAME	PAGE
Decoder Connector	MAG_CN1	2-32
Debug Port	DEG1	2-32
Key Connector	I_BUTTON1	2-32
Output Connector	IO1	2-33

# **Inverter Board**

JUMPER/CONNECTOR	NAME	PAGE
Input Connector	CN1	2-35
Output Connector	CN2	2-35

PA-6610 USER'S MANUAL

# 2-2. HOW TO SET JUMPERS

You can configure your board by setting the jumpers. A jumper consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", also known as the jumper cap (with a metal contact inside), you are able to connect the pins. So you can set-up your hardware configuration by "opening" or "closing" pins.

Jumpers can be combined into sets that called jumper blocks. When jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows what this looks like.

### JUMPERS AND CAPS



If a jumper has three pins for example, labelled PIN1, PIN2, and PIN3. You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

# JUMPER DIAGRAMS



Jumper Cap looks like this

2 pin Jumper looks like this



- I		
	ιг	
	L L	



3 pin Jumper looks like this

|--|



# JUMPER SETTINGS





3 pin Jumper 2-3 pin closed(enabled) looks like this



Jumper Block 1-2 pin closed(enabled) looks like this



PA-6610 USER'S MANUAL

1 2

Page: 2-5

# 2-3. MAIN BOARD COMPONENT LOCATIONS & JUMPER SETTINGS

#### M/B: PB-6810



PA-6610 Main Board Component Locations

# 2-3-1. External I/O Ports

# 2-3-1-1. Power Button

Follow the instruction below to use the power button.

- To turn on the system, press the power button briefly.
- During normal operation, you can press the power button briefly to turn off the panel backlight. When you next briefly press the power button, the LCD backlight will turn on again.
- To turn off the system, press and hold the power button for 2 seconds. Then the system will ask for your confirmation by prompting a message of power-off.

# 2-3-1-2. DC IN Port

**DC\_IN1:** DC Power-In Port The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	GND
3	+24V
4	+24V







# 2-3-1-3. Cash Drawer Port

# DRW1: Cash Drawer Port

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	4	+12V/+24V (Max.
			current: IA)
2	Drawer Open	5	NC
3	Drawer Sense	6	GND



# 2-3-1-4. COM Port

**COM1:** RJ45 Serial Port, supporting VFD The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	6	NC
2	RXD	7	RTS
3	TXD	8	CTS
4	NC	9	RI/+5V/+12V selectable (Max. current: 1A)
5	GND	10	NC



**COM2:** D-Sub9 Serial Port, co-lay with COM2-2 The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI/+5V/+12V selectable (Max. current: 1A)
5	GND		



COM2

# 2-3-1-5. VGA Port

#### VGA1: VGA Port

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	SDA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	SCL
8	GND		



VGA1

# 2-3-1-6. USB Port

# USB1, USB3: USB Type A Ports

The pin assignments are as follows:

PIN	ASSIGNMENT	
1	+5V (Max. current: 0.5A)	
2	DM	
3	DP	
4	GND	





#### USB2: Micro-USB Port

PIN	ASSIGNMENT
1	+5V (Max. current: 0.5A)
2	DM
3	DP
4	ID
5	GND



USB2

# 2-3-1-7. LAN Port

# CN\_LAN1: RJ45 LAN Port

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	TXD+	5	NC
2	TXD-	6	RXD-
3	RXD+	7	NC
4	NC	8	NC



## LAN LED Indicator:

#### Left Side LED

Yellow Color Blinking	LAN Message Active
Off	No LAN Message Active

## Right Side LED

Green Color On	10/100Mbps LAN Speed Indicator
Orange Color on	Giga LAN Speed Indicator
Off	No LAN switch/ hub connected.

# 2-3-2. Other Components on Main Board

### 2-3-2-1. COM Connector

#### COM2-2: Serial Port Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI/+5V/+12V selectable (Max. current: 1A)
5	GND	10	NC

# 

#### DEBUG-COM3, COM5: Serial Port Wafers

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	6	NC
2	RXD	7	RTS
3	TXD	8	CTS
4	NC	9	RI/+5V/+12 selectable (Max. current: 1A)
5	GND	10	NC



**DEBUG-COM3** 

#### COM4: Serial Port Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	6	NC
2	RXD	7	RTS
3	TXD	8	CTS
4	NC	9	NC
5	GND	10	NC

Page: 2-12

PA-6610 USER'S MANUAL

# 2-3-2-2. COM Port RI & Voltage Selection

**JP\_COM1, JP\_COM2, JP\_COM5, JP\_DEBUG1:** COM RI & Voltage Selection The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION			
RI	1-2	5 <b>1</b> 6 <b>2</b> JP_COM1	5 <b>1</b> 6 <b>2</b> <b>JP_COM2</b> (Default)	2 0 0 6 1 0 0 5 JP_COM5	6 5 2 1 <b>JP_DEBUG1</b> (Default)
12V	3-4	5 1 6 2 <b>JP_COM1</b> (Default, supports VFD)	5 1 6 2 JP_COM2	2 6 1 5 JP_COM5	6 5 2 1 JP_DEBUG1
5V	5-6	5 0 0 1 6 0 0 2 JP_COM1	5 0 0 1 6 0 0 2 JP_COM2	2 6 1 6 <b>JP_COM5</b> (Default, supports MSR)	6 - 5 2 - 1 JP_DEBUG1

# 2-3-2-3. USB Connector

# USB1-2, USB3-2: USB Wafers

The pin assignments are as follows:

PIN	ASSIGNMENT
1	DM
2	DP
3	GND
4	+5V (Max. current: 0.5A)
5	GND



#### USB2-2: USB Wafer

PIN	ASSIGNMENT
1	DM
2	DP
3	ID
4	+5V (Max. current: 0.5A)
5	GND





# 2-3-2-4. Cash Drawer Power Selection

**JP5:** Cash Drawer Power Selection The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
+24V	1-2	3 1 <b>JP5</b>
+12V	2-3	3 1 <b>I</b> II <b>JP5</b>

Note: Manufacturing Default is +12V.

# 2-3-2-5. SPI EEPROM Selection

JP8: Pin Header for SPI EEPROM Selection

The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Programming EEPROM	1-2	1 3 <b>JP8</b>
Normal	2-3	1 3 <b>JP8</b>

Note: Manufacturing Default is Normal.

## 2-3-2-6. Backlight Type Selection

**JP1:** Pin Header for Backlight Type Selection The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
LED	1-2	3 1 □□□ JP1
CCFL	2-3	3 1 <b>JP1</b>

Note: Manufacturing Default is CCFL.

# 2-3-2-7. Touch Function & USB Channel Selection

**JP9, JP10:** Pin Header for Touch Function & USB Channel Selection The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLU	JSTRATION
To R-Touch Controller	JP9: 1-2 JP10: 1-2	3 1	□ 3 □ 1
		JP9	JP10
To USB4	JP9: 2-3 JP10: 2-3	□ <sup>3</sup> □ 1 JP9	□ <sup>3</sup> □ 1 JP10

Note: Manufacturing Default is To R-Touch Controller.

# 2-3-2-8. HSIC USB-CLK Selection

JP2, JP3: Pin Header for HSIC USB-CLK Selection

The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLU	<b>JSTRATION</b>
38.4 MHz	JP2: 1-2 JP3: 1-2	JP2	<b>JP3</b>
26.0 MHz	JP2: 1-2 JP3: 2-3	<b>JP2</b>	JP3
19.2 MHz	JP2: 2-3 JP3: 1-2	<b>JP2</b>	<b>JP3</b>
12.0 MHz	JP2: 2-3 JP3: 2-3	<b>JP2</b>	<b>JP3</b>

Note: Manufacturing Default is 26.0 MHz.

### 2-3-2-9. LED Connector

PWR\_LED1-1: Power Indication LED Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT
1	GND
2	+5V



PA-6610 USER'S MANUAL

Page: 2-17

# 2-3-2-10. Power For Thermal Printer Connector

**PRT\_PWR1:** Power for Thermal Printer Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT
1	+24V
2	+24V
3	GND
4	GND



# PRT\_PWR1

# 2-3-2-11. External Speaker Connector

**SPK1-1:** External Speaker Wafer The pin assignments are as follows:

PIN	ASSIGNMENT
1	SPO+
2	SPO-



# 2-3-2-12. Inverter Connector

INV1-1: Inverter Wafer

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	+12V	5	LVDS_BKLTEN
2	+12V	6	BRCTR
3	GND	7	GND
4	GND		



# 2-3-2-13. LVDS Connector

#### LVDS2: LVDS Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	11	RINO1-
2	+3.3V	12	CLKO-
3	RINO2+	13	GND
4	+3.3V	14	GND
5	RINO2-	15	RINO0+
6	GND	16	GND
7	GND	17	RINO0-
8	GND	18	+3.3V
9	RINO1+	19	GND
10	CLKO+	20	+3.3V



# 2-3-2-14. Touch Panel Connector

TOUCH1-1: Touch Panel Wafer

PIN	ASSIGNMENT
1	LR (Low Right)
2	LL (Low Left)
3	Probe
4	UR (Up Right)
5	UL (Up Left)



#### 2-3-2-15. LAN EEPROM I/F Connector

# EEPROM\_CN1: LAN EEPROM I/F Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	4	EEDI
2	EECS	5	NC
3	EECK	6	+3.3V



#### 2-3-2-16. Speaker Connector

DC12V\_PWR1: Speaker wafer

The pin assignments are as follows:

PIN	ASSIGNMENT
1	+12V
2	GND
3	+12V



### 2-3-2-17. Reset Button

#### **RST\_SW1:** Reset Button

ACTION	ASSIGNMENT	
Click	0V	
Release	+3.3V	



# 2-3-2-18. Volume Adjustor

**VOL\_N\_SW1:** Volume Down Adjustor The pin assignments are as follows:

ACTION	ASSIGNMENT	
Click	Volume down	
Release	N/A	

**VOL\_P\_SW1:** Volume Up Adjustor The pin assignments are as follows:

ACTION	ASSIGNMENT	
Click	Volume up	
Release	N/A	

# 2-3-2-19. Recovery Button

SW4: Recovery Button

ACTION	ASSIGNMENT	
Click	0V	
Release	+3.3V	





# 2-3-2-20. Antenna Connector

#### JA1: Antenna Connector

The pin assignments are as follows:

PIN	ASSIGNMENT	
1	Signal	
2	GND	
3	GND	



### 2-3-2-21. SD Card Slot

#### SD\_CARD1: SD Card Slot

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	Data3	7	Data0
2	CMD	8	Data1
3	GND	9	Data2
4	3.3V	10	CD_SW1
5	CLK	11	SW3_COM
6	GND	12	WP_SW2



# 2-4. PRINTER BOARD COMPONENT LOCATIONS & JUMPER SETTINGS



PA-6610 Printer Board Component Locations
# 2-4-1. Power Supply Connector

24V\_CN1: Power Supply Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	I/O	FUNCTION
1	GND	-	GND
2	GND	-	GND
3	24V	Ι	24V
4	24V	Ι	24V



# 2-4-2. Thermal Head/Motor/Sensor Connector

PRINT\_CN1: Thermal Head/Motor/Sensor Wafer

PIN	ASSIGNMENT	I/O	FUNCTION	
1	24V	0	Head drive power	<b>50</b>
2	24V	0	Head drive power	
3	24V	0	Head drive power	
4	24V	0	Head drive power	
5	24V	0	Head drive power	
6	24V	0	Head drive power	
7	DAT	0	Print data output	
8	CLK	0	Synchronizing signal for print data transfer	
9	GND	-	Head GND	
10	GND	-	Head GND	
11	GND	-	Head GND	
12	GND	-	Head GND	
13	GND	-	Head GND	]

PIN	ASSIGNMENT	I/O	FUNCTION
14	GND	-	Head GND
15	NC	-	Unused
16	DST4	0	Head strobe signal
17	DST3	0	Head strobe signal
18	3.3V	-	Logic Power
19	GND	-	Thermistor GND
20	GND	-	Thermistor GND
21	TH	Ι	Thermistor signal
22	NC	-	Unused
23	DST2	0	Head strobe signal
24	DST1	0	Head strobe signal
25	GND	-	Head GND
26	GND	-	Head GND
27	GND	-	Head GND
28	GND	-	Head GND
29	GND	-	Head GND
30	GND	-	Head GND
31	!LATCH	0	Print data latch
32	24V	0	Head drive power
33	24V	0	Head drive power
34	24V	0	Head drive power
35	24V	0	Head drive power
36	24V	0	Head drive power
37	24V	0	Head drive power
38	NC	-	Unused
39	PS	Ι	Signal of the out-of-paper
			sensor
40	Vps	0	Power supply of the out-of-
			paper sensor

PIN	ASSIGNMENT	I/O	FUNCTION
41	GND	-	GND of the platen position/
			out-of-paper sensor
42	HS	Ι	Signal of the platen position
			sensor
43	NC	-	Unused
44	FG	-	Frame GND
45	FG	-	Frame GND
46	NC	-	Unused
47	2A	0	Motor drive signal
48	1B	0	Motor drive signal
49	1A	0	Motor drive signal
50	2B	0	Motor drive signal

# 2-4-3. RS-232 Interface Connector

COM1: RS-232 Interface Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	6	DSR/CTS
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR/RTS	9	NC
5	GND	10	NC



# 2-4-4. Auto-Cutter Connector

## CUT\_CN1: Auto-cutter Wafer

PIN	ASSIGNMENT	I/O	FUNCTION
1	NC	-	Unused
2	Vcs	0	Power supply of the home
			position sensor
3	GND	-	GND of the home position
			sensor
4	CUTS	Ι	Signal of the hom position
			sensor
5	2B-1	0	Auto-cutter motor drive signal
6	2B-2	0	Auto-cutter motor drive signal
7	2A-1	0	Auto-cutter motor drive signal
8	2A-2	0	Auto-cutter motor drive signal
9	1B-1	0	Auto-cutter motor drive signal
10	1B-2	0	Auto-cutter motor drive signal
11	1A-1	0	Auto-cutter motor drive signal
12	1A-2	0	Auto-cutter motor drive signal



# 2-5. VFD BOARD COMPONENT LOCATIONS & JUMPER SETTINGS



PA-6610 VFD Board Component Locations

# 2-5-1. Power Switch Selection

**JP12V\_SEL1:** Power Switch Selection The jumper settings are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
OFF	1-2	
		JP12V_SEL1
ON	2-3	
		JP12V_SEL1

Note: Manufacturing Default is ON.

# 2-5-2. Power Switch

CN2: Power Switch

PIN	ASSIGNMENT
1	High Level
2	NC
3	Low Level

Ш		П
0	0	。 1
С	:N	2

# 2-5-3. RS-232 Serial Interface

CN1: RS-232 Serial Interface wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	11	NC
2	TXD	12	NC
3	RXD	13	NC
4	DTR	14	NC
5	DSR	15	NC
6	RTS	16	NC
7	CTS	17	NC
8	+12V/+5V	18	NC

# 2-6. MSR BOARD COMPONENT LOCATIONS & JUMPER SETTINGS



PA-6610 MSR Board Component Locations

# 2-6-1. Decoder Connector

#### MAG\_CN1: Decoder Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	HDC2	5	GND
2	HDC1	6	HDA2
3	HDB2	7	HDA1
4	HDB1		



# 2-6-2. Debug Connector

**DEG1:** Debug Port Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT
1	TX
2	RX
3	NC
4	GND
5	+5V



# 2-6-3. Key Connector

#### I\_BUTTON1: Key Wafer

The pin assignments are as follows:

PIN	ASSIGNMENT
1	I_B1
2	GND



Page: 2-32

PA-6610 USER'S MANUAL

# 2-6-4. Output Connector

# IO1: Output wafer

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	CLK_KB	7	RX_MSR
2	CLK_PC	8	TX_MSR
3	DATA_KB	9	GND
4	DATA_PC	10	USB_D+_R
5	+5V	11	USB_DR
6	CHASSIS GND	12	GND



# 2-7. INVERTER BOARD COMPONENT LOCATIONS & JUMPER SETTINGS



**PA-6610 Inverter Board Component Locations** 

# 2-7-1. Input Connector

CN1: Input Connector

The pin assignments are as follows:

PIN	ASSIGNMENT	DESCRIPTION
1	Vin	Input Voltage
2	Vin	Input Voltage
3	GND	Power System Return
4	GND	Power System Return
5	Brt ON/OFF	ON/OFF Control
6	Brt ADJ	Lamp Control
7	GND	Power System Return



# 2-7-2. Output Connector

CN2: Output Connector

PIN	ASSIGNMENT	DESCRIPTION
1	Lamp High	High Voltage Output for High Side CCFL
2	Lamp Low	Low Voltage Output for Low Side CCFL





# SOFTWARE UTILITIES

This chapter provides the detailed information for you to operate the system applications.

Sections included:

- Version List
- OS API
- Firmware Control Command
  - Printer Board
  - VFD Board
  - MSR Board
- Utility Update
  - OS
  - Printer Board
  - VFD Board
  - MSR Board

# **3-1. VERSION LIST**

Category	Item	Version	Release	Image Name
			date	
System	Android	4.1.1		
Platform	Kernel	3.1.10		
Android	Browser	4.1.1		
Bundled AP	Calculator	4.1.1		
	Calendar	4.1.1		
	Clock	2.0.3		
	Downloads	4.1.1		
	Email	4.1		
	Gallery	1.1.40000		
	Music	4.1.1		170-6610-
	People	4.1.1	2013/4/9	04Q-01-
	Search	4.1.1		user mode
	Settings	4.1.1		
Added AP	eGalaxCalibrator	0.0.9		
	OI File Manager	2.0.2		
Updated AP	MB-1030 Printer	1.0		
	Update Application			
	MB-3013 MSR	1.0		
	Update Application			
	MB-4103 VFD	1.0		
	Update Application			
	Recovery	1.0		
OS API	MainActivity	A01-6610-000-		
		000-130325		
Firmware	Printer Board	F00-1030-001-		
	Firmware	03-130327		
	MSR Board Firmware	F00-3013-001-		
		U3-C01		
	VFD Board Firmware	F00-4103-001-		
		02-130410		

**Note:** Cut off the power for mandatory shutdown but if you perform that constantly, it may bring about system damage. All the software utilities installed in the system are provided for free. Protech Systems won't take responsibility for any loss or damage caused.

# 3-2. OS API

# 3-2-1. Programming Guide

- 1. Create a new project in Eclipse.
- 2. Copy provided JAR file (CashDrawer.jar, SAPI.jar, VFD.jar) into the path below: Libs
  - CashDrawer.jar
  - VFD.jar
  - SAPI.jar
  - Msr.jar
  - ThermalPrinter.jar
- 3. In Libraries tab of the target project's properties, confirm that the JAR file you added (CashDrawer.jar SAPI.jar VFD.jar) is registered in [Java Build Path]. If it has not been added, add the JAR file into build path using [Add Jars...].
- 4. Copy the library file (libeposprint.so) into following path: Libs
  - armeabi
     libgpio\_control.so
     libserial\_port.so

Import Function Declare: import android.VFD.VFD; import android.VFD.Msr; import android.CashDrawer.CashDrawer; import android.ThermalPrinter.ThermalPrinter;

# 3-2-2. API Reference

## 3-2-2-1. Cash Drawer API

#### OpenCashDrawer

### Public Boolean OpenCashDrawer();

Purpose	Open the cash drawer API.
Return	True (1) on success, False (0) on failure
Example	<b>boolean</b> ControlResult = <b>false</b> ;
	ControlResult = CDrawer.OpenCashDrawer();
	if(ControlResult)
	//"Cash Drawer Control Success!"
	else
	//"Cash Drawer Control Failure!"
Example	<pre>boolean ControlResult = raise; ControlResult = CDrawer.OpenCashDrawer(): if(ControlResult) //"Cash Drawer Control Success!" else //"Cash Drawer Control Failure!"</pre>

## GetCashDrawerStatus

# Public Boolean GetCashDrawerStatus ();

Purpose	Get the cash drawer status.
Value	Put value to Function, than get CashdrawerStatus back.
Return	True (1) on success, False (0) on failure False (0)
Example	<b>boolean</b> ControlResult = <b>false</b> ;
	CashDrawer CDrawer =newCashDrawer();
	ControlResult = CDrawer.GetCashDrawerStatus();
	if(ControlResult)
	//"Cash Drawer Status Open !"
	else
	//"Cash Drawer Status Close !"

#### 3-2-2-2. VFD API

## OpenVFD

# Public Boolean OpenVFD(int BuadRate)

Purpose	Open the VFD Port.
Value	Set VFD Baud Rate; MB-4103 default baud rate is 9600;
Return	True (1) on success, False (0) on failure

#### CloseVFD

### Public Boolean CloseVFD();

Purpose	Close the VFD Port.
Return	True (1) on success, False (0) on failure False (0)

# SendCommand

#### Public Boolean SendCommand(byte[] data);

Purpose	Send Command to VFD.
Value	VFD Command Code. ESC/POS Command.
Return	True (1) on success, False (0) on failure False (0)
Example	VFD - Clear VFD Command (EPSON Command)
	//Initialize a VFD class instance
	VFD VFD_Control = <b>new</b> VFD();
	VFD_Control.OpenVFD(9600);
	<pre>byte[] data = newbyte[1];</pre>
	data[0] = 0x0C;
	VFD_Control.SendCommand(data);
	VFD_Control.CloseVFD();

#### 3-2-2-3. MSR API

## **OpenMSR**

## Public Boolean OpenMSR (int BaudRate)

Purpose	Open theMSR Port.
Value	Set Msr BaudRate; MJR243R baud rate default is 19200;
Return	True (1) on success, False (0) on failure

#### CloseMSR

### Public Boolean CloseMSR( );

Purpose	Close the MSR Port.
Return	True (1) on success, False (0) on failure False (0)

# SendCommand

#### Public Boolean SendCommand (byte[] data );

Purpose	Send Command to MSR.	
Value	Msr Command Code.	
Return	True (1) on success, False (0) on failure False (0)	
Example	Msr – Send Command to Msr	
	//Initialize a VFD class instance	
	Msr Msrcontrol = newMsr ();	
	Msrcontrol.OpenMSR(19200);	
	<pre>byte[] data = newbyte[1];</pre>	
	data[0] = 0x0C;	
	Msrcontrol.SendCommand(data);	

#### **Receiver Data - Attach**

	Public Boolean Attach();
Purpose	Receive Msr Data
Return	True (1) on success, False (0) on failure False (0)
Example	Receive Data from MSR.
	Before use this function need to implements ObserverInterface.
	Observer = Current class.
	<b>publicclass</b> MsrActivity <b>extends</b> Activity <b>implements</b> android.Msr.Observer {
	EditText mReception;
	Msr Msrcontrol;
	@Override
	<pre>protectedvoid onCreate(Bundle savedInstanceState) {</pre>
	<pre>super.onCreate(savedInstanceState);</pre>
	<pre>setContentView(R.layout.activity_msr);</pre>
	mReception = (EditText)
	findViewById(R.id. <i>EditTextReception</i> );
	Msrcontrol = new Msr();
	Msrcontrol.OpenMSR(115200);Msrcontrol.Attach(this);
	@Override
	<pre>publicvoid Update(finalbyte[] buffer, finalint size) {runOnUiThread(new Runnable() {</pre>
	<pre>publicvoid run() {</pre>
	if (mReception != null) {
	mReception.append(new String(buffer, 0, size));
	}
	}
	});
	}
	}
	When Close:
	<pre>Msrcontrol.CloseMSR();Msrcontrol.Detach(this);</pre>

#### **Receiver Data - Detach**

# Public Boolean Detach();

Purpose	Cancel Obsver from Msr Data
Return	True (1) on success, False (0) on failure False (0)

## **Update Event**

# Public Void Update(final byte[] buffer, final int size);

Purpose	Get Msr Data String	
Return	byte[] buffer = Msr data	
	int size = buffer count.	
	Before using this function, implements Observer Interface.	
	Observer = Current class.	
	Example:	
	@Override	
	<pre>publicvoid Update(finalbyte[] buffer, finalint size)</pre>	
	{runOnUiThread(new Runnable() {	
	<pre>publicvoid run() {</pre>	
	if (mReception != null) {	
	<pre>String MsrString =new String(buffer, 0, size));</pre>	
	}	
	}	
	}	

#### 3-2-2-4. Thermal Printer API

#### **OpenPrinter**

#### Public Boolean OpenPrinter (int Baudrate)

Purpose	Open the Thermal Printer Port.
Value	Set Printer Baud Rate; MB-1030 baud rate default is 115200;
Return	True (1) on success, False (0) on failure

#### ClosePrinter

#### Public Boolean ClosePrinter( );

Purpose	Close the Thermal Printer Port.	
Return	True (1) on success, False (0) on failure False (0)	

#### CutPaper

### Public BooleanCutPaper(int type);

Purpose	Cut paper function.
Value	Type = 1 (Full cut) $2$ (Partial cut)
Return	True (1) on success, False (0) on failure False (0)

#### Text

#### Public BooleanText(String data);

Purpose	Print string data to print.	
Value	Data = String data.	
Return	True (1) on success, False (0) on failure False (0)	
Example	<b>imple</b> ThermalPrinterPrinter_Control = <b>new</b> ThermalPrinter();	
Printer_Control.OpenPrinter(115200);		
	Printer_Control.Text("123456789");	
	Printer_Control.Text("\n");	
	Printer_Control.ClosePrinter();	
	//P.S If application want to line break. Please use "\n" to change line.	

## BarcodePrint

# Public BooleanBarcodePrint(String Data,int Type,int Hri,int Width,int Height);

Purpose	Print Barcode.	
Value	Data = Send barcode	string data to printer.
	Type = $1 \text{ UPC-A}(1)$	
	Type = $2 \text{ UPC-E}(1)$	
	Type = $3 \text{ EAN-13}(1)$	)
	Type = $4 \text{ EAN-8}(1)$	
	Type = $5 \text{ CODE39}(1$	)
	Type = $6 \text{ ITF}(1)$	
	Type = 7 CODEBA	R(1)
	Type = $8$ UPC-A(2)	
	Type = 9 UPC- $E(2)$	
	Type = $10 \text{ EAN-13}(2)$	2)
	Type = $11 \text{ EAN-8}(2)$	)
	Type = $12 \text{ CODE39}$	(2)
	Type = $13 \text{ ITF}(2)$	
	Type = $14 \text{ CODABA}$	AR(2)
	Type = $15 \text{ CODE93}(2)$	
	Type = 16 Code 128(2)	
	Hri =	1
	hri	Printing Position
	0	No print
	1	Above bar code
	2	Below bar code
	3,	Above and below bar code(both)
	Width = $1 \le n \le 6$	
	$Height = 1 \le n \le 255$	
Return	True (1) on success,	False (0) on failure False (0)

LoadPicPrinter

#### Public Bitmap LoadPicPrinter (Bitmap data, boolean Halftone);

Purpose	Prepare to load pic sent to printer.	
Value	Bitmap data (picture data)	
	Halftone = true or false (Enable or Disable)	
Return	Return Threshold Pic.	

## ImagePrinter

#### Public BooleanImagePrint(Bitmap data);

Purpose	Sent bitmap to printer.
Value	Bitmap data (Threshold data)
Return	True (1) on success, False (0) on failure False (0)

#### SendCommand

# Public Boolean SendCommand (byte[] data );

Purpose	Send command byte to printer.	
Value	Command Code. Please referMP-1030 Command Manual	
Return	True (1) on success, False (0) on failure False (0)	
Example		
-	ThermalPrinterPrinter_Control = <b>new</b> ThermalPrinter();	
	Printer_Control.OpenPrinter(115200);	
<pre>byte[] data = newbyte[2];</pre>		
	data[0] = 0x1B;	
	data[1] = 0x6d;//Partial cut	
	Printer_Control.SendCommand(data);	
	Printer_Control.ClosePrinter();	

#### GetRealTimeStatus

#### Public intGetRealTimeStatus(int n );

Purpose	Get R	eal Time	Status	•	
Value	Comn	nand Code	e. Plea	se refer <u>l</u>	MP-1030 Command Manual
Return	Real 7	Fime Statu	ıs Byt	e.	
Example	n = 2 : (	Off-line status	6.		
	Bit	On / Off	Hex	Decimal	Function
	0	Off	00	0	Not used. Fixed to Off.
	1	On	02	2	Not used. Fixed to On.
	2	Off	00	0	Cover is closed.
		On	04	4	Cover is open.
	3	Off	00	0	Not used. Fixed to Off.
	4	On	10	16	Not used. Fixed to On.
	5	Off	00	0	No paper-end stop.
		On	20	32	Printing stops due to paper end.
	6	Off	00	0	No error.
		On	40	64	Error occurs.
	7	Off	00	0	Not used. Fixed to Off.

Int RealTimeStatus = 0;

ThermalPrinterPrinter\_Control = **new**ThermalPrinter(); Printer\_Control.OpenPrinter(115200); RealTimeStatus = Printer\_Control.GetRealTimeStatus(2); // TODO Detect Status Printer\_Control.ClosePrinter();

## GetPaperEndEvent

#### Public intGetPaperEndEvent();

Purpose	Get Paper End Status.
Return	0x00 = Response Error $0x01 = Paper End, 0x02 = Paper Normal$
	Int PaperEndStatus= 0;
	ThermalPrinterPrinter_Control = <b>new</b> ThermalPrinter();
	Printer_Control.OpenPrinter(115200);

#### GetCoverEvent

#### Public intGetCoverEvent();

Purpose	Get Cover Status.			
Return	0x00 = Response Error  0x01 = Cover Open, $0x02 = Over Close$			
	Int CoverStatus = $0$ ;			
	ThermalPrinterPrinter_Control = <b>new</b> ThermalPrinter();			
	Printer_Control.OpenPrinter(115200);			
	CoverStatus = Printer_Control.GetCoverEvent ();			
	// TODO Detect Status			
	if (CoverStatus == 1)			
	{ Toast.makeText(PrinterActivity.this,			
	"Cover Open!", Toast.LENGTH_SHORT).show();			
	}			
	else			
	{ Toast.makeText(PrinterActivity.this,			
	"Cover Close!", Toast.LENGTH_SHORT).show();			
	}			
	Printer Control.ClosePrinter();			

## **Receiver Data - Attach**

# Public Boolean Attach();

Purpose	Receive Printer Data			
Return	True (1) on success, False (0) on failure False (0)			
Example	Receive Data fromPrinter.			
	Before use this function need to implements Observer Interface.			
	Observer = Current class.			
	<pre>publicclass PrinterActivity extends Activity implements android.ThermalPrinter.Observer {</pre>			
	ThermalPrinter Printer_Control;			
	@Override			
	<pre>protectedvoid onCreate(Bundle savedInstanceState) {</pre>			
	<pre>super.onCreate(savedInstanceState);</pre>			
	<pre>setContentView(R.layout.activity_msr);</pre>			
	<pre>Printer_Control= newThermalPrinter();</pre>			
	Printer_Control.Attach(this);			
	If( !Printer_Control.OpenPrinter(115200))			
	{			
	//Port alrady open.			
	}			
	@Override			
	<pre>publicvoid Update(finalint Device, finalintvalue) {runOnUiThread(new Runnable() {</pre>			
	<pre>publicvoid run() {</pre>			
	//Cover			
	<b>if</b> (Device == $0x01$ )			
	{			
	if(Value==0x01)			
	{			

```
//"Cover Open"
}
else
     {
//"Cover Close"
     }
}
elseif (Device == 0x02)
{
//Paper
if(Value==0x01)
     {
 //"No Paper Present"
     }
else
     {
//"Paper Present"
     }
}
});
     }
}
When Close:
Printer_Control.ClosePrinter();Printer_Control.Detach(this);
```

## **Receiver Data - Detach**

### **Public Boolean Detach();**

Purpose	Cancel Obsver from Msr Data
Return	True (1) on success, False (0) on failure False (0)

Update Event

## Public Void Update(final int Device, final int Value);

Purpose

Get Cover & Paper event

Return

Device	0x01(Cover)	0x02 (Paper)
Value	0x01(CoverOpen)	0x01(No Paper Present)
	0x02(CoverClose)	0x02(Paper Present)

#### GetFWVersion

## Public String GetFWVsion();

Purpose	Get FW Version
Return	FW Version String.

## **GetCodePageVersion**

### Public String GetCodePageVersion();

Purpose	Get CodePage Version
Return	Code Page Version String.

# 3-3. FIRMWARE CONTROL COMMAND

# 3-3-1. Printer Board

#### 1. COMMAND LIST

#### Standard commands

Control codes	Hexadecimal codes	Function
<lf></lf>	0A	Line feed
<dle eot=""></dle>	10 04	Real-time status transmission
<dle dc4=""></dle>	10 14	Real-time output of specified pulse
<esc sp=""></esc>	1B 20	Set character right space amount
<esc !=""></esc>	1B 21	Batch specify print mode
<esc \$=""></esc>	1B 24	Specify absolute position
<esc -=""></esc>	1B 2D	Specify/cancels underline mode
<esc 2=""></esc>	1B 32	Set default line spacing
<esc 3=""></esc>	1B 33	Set line feed amount
<esc ==""></esc>	1B 3D	Select peripheral device
<esc @=""></esc>	1B 40	Initialize printer
<esc e=""></esc>	1B 45	Specify/cancel emphasized printing
<esc j=""></esc>	1B 4A	Print and Paper Feed
<esc m=""></esc>	1B 4D	Select character font
<esc r=""></esc>	1B 52	Select international characters
<esc \=""></esc>	1B 5C	Specify relative position
<esc a=""></esc>	1B 61	Position alignment
<esc 3="" c=""></esc>	1B 63 33	Select paper out sensor to enable at paper out signal output
<esc d=""></esc>	1B 64	Print and feed paper n lines
<esc i=""></esc>	1B 69	Full cut
<esc i=""></esc>	1B 6D	Partial cut
<esc p=""></esc>	1B 70	Specify pulse
<esc t=""></esc>	1B 74	Select character code table
<esc {=""></esc>	1B 7B	Specify/cancel upside-down characters
<fs p=""></fs>	1C 70	Print NV bit image
<fs q=""></fs>	1C 71	Define NV bit image
<gs !=""></gs>	1D 21	Select character size
<gs *=""></gs>	1D 2A	Define download bit images
<gs (=""></gs>	1D 28	Test print
<gs></gs>	1D 2F	Print download bit images
<gs b=""></gs>	1D 42	Specify/cancel white/black inverted printing
<gs h=""></gs>	1D 48	Select HRI character print position
<gs i=""></gs>	1D 49	Send Printer ID
<gs l=""></gs>	1D 4C	Set left margin
<gs p=""></gs>	1D 50	Set basic calculated pitch
<gs v=""></gs>	1D 56	Cut paper
<gs a=""></gs>	1D 61	Enable/disable transmission of automatic status
<gs f=""></gs>	1D 66	Select HRI character font
<gs h=""></gs>	1D 68	Set bar code height
<gs k=""></gs>	1D 6B	Print bar code
<gs r=""></gs>	1D 72	Transmission of status
<gs 0="" v=""></gs>	1D 76 30	Print raster bit images
<gs w=""></gs>	1D 77	Set bar code horizontal size

#### Kanji Control Commands

Control codes	Hexadecimal codes	Function
<fs !=""></fs>	1C 21	Batch specify Kanji character print mode
<fs &=""></fs>	1C 26	Specify Kanji character mode
<fs .=""></fs>	1C 2E	Cancel Kanji character mode

#### 2. COMMAND NOTATION

[Name]	The name of the command.
[Format]	The code sequence. ASCII Indicates the ASCII equivalents.
	Hex indicates the hexadecimal equivalents.
	Decimal indicates the decimal equivalents.
	[] k indicates the contents of the [] should be repeated k times.
[Range]	Gives the allowable ranges for the arguments.
[Description]	Describes the function of the command.

#### 3. STANDARD COMMAND DETAILS

#### LF

[Name]	Print and line feed.
[Format]	ASCII LF
	Hex. 0A
	Decimal 10
[Range]	N/A
[Description]	This command prints the data in the print buffer and feeds one line based on the current set line
	spacing in standard mode.

#### DLE EOT n

DEE EOTI	
[Name]	Real-time status transmission.
[Format]	ASCII OLE EOT n
	Hex. 10 04 n
	Decimal 16 4 n
[Range]	1 ≤ n ≤ 4

[Description]	cription] Transmits the selected printer status specified by n in real time, according to the following pa							
	n = 1 : Transmit printer status. n = 2 : Transmit off-line status.							
	n = 3 : Transmit error status. n = 4 : Transmit paper roll sensor status.							
		Printer status	Hav	Desimal	Function			
	BI	On / Off	Hex	Decimai	Function			
	0	On	00	0	Not used. Fixed to On.			
		On Off	02	2	Not used. Fixed to On.			
	2	Off	00	0	Drawer open/close signal is LOW.			
		On Off	04	4	Drawer open/close signal is HIGH.			
	3	Off	00	0	On-line.			
		On	08	8	Off-line.			
	4	On Off	10	16	Not used. Fixed to On.			
	5	Off	00	0	Not used. Fixed to Off.			
	6	Off	00	0	Not used. Fixed to Off.			
	7	Off	00	0	Not used. Fixed to Off.			
	II = 2 : 0	On-line status	S. Hov	Decimal	Function			
	0	Off	00	Decimal	Not used. Eived to Off			
	1	On	00	0	Not used. Fixed to On.			
		011	02	2	Not used. Fixed to On.			
	2	01	00	0				
	2	Off	04	4	Cover is open.			
	3	Off	10	0	Not used. Fixed to Off.			
	4	On Off	10	16	Not used. Fixed to On.			
	5	Off	00	0	No paper-end stop.			
		On	20	32	Printing stops due to paper end.			
	6	Off	00	0	No error.			
		On	40	64	Error occurs.			
	1	Off	00	0	Not used. Fixed to Off.			
		Error status						
	II = 3 : I	On / Off	Hoy	Docimal	Function			
		Off Off	00	Decimai	Not used. Eixed to Off			
	1	On	00	0	Not used. Fixed to On			
	2	011	02	2	Not used. Fixed to Off.			
	2	011	00	0	Not used. Fixed to Off.			
	3	01	10	10	Not used. Fixed to Oil.			
	4	On Off	10	16	Not used. Fixed to On.			
	5	Off	00	0	Not used. Fixed to Off.			
	0	Off Off	00	0	Not used. Fixed to Off.			
	/	Off	00	0	Not used. Fixed to Off.			
	$n = 4 \cdot 6$	Continuous n	anor co	neor etatue				
	11 = 4 . V		Laper se	Docimal	Function			
		017 011	00	Decimai	Net used Eived to Off			
	1	Off	00	0	Not used. Fixed to On			
		011	02	2	Not used. Fixed to Off.			
	2	On	00	0	No paper-near-end stop.			
		01	04	4	Finding stops due to paper near end.			
	3	011	00		No paper-near-end stop.			
		On	08	8	Printing stops due to paper near end.			
	4	Un Off	10	16	Not used. Fixed to Un.			
	5	011	00	0	No paper-end stop.			
		On On	20	32	Printing stops due to paper end.			
	6	Off	00	0	No paper-end stop.			
	<u> </u>	On	40	64	Printing stops due to paper end.			
	7	Off	00	0	Not used. Fixed to Off.			

#### DLE DC4 n m t

[Name]	Real-time output of specified pulse.
[Format]	ASCII DLE DC4 n m t
	Hex. 10 14 n m t
	Decimal 16 20 n m t
[Range]	n = 1
	m = 0,1
	1≤ t≤ 8
[Description]	This outputs a signal specified by t to the connector pin specified by m.
	m = 0: #2 Pin of the drawer kick connector
	m = 1: #5 Pin of the drawer kick connector
	On time is set to t x 100 msec; Off time is set to t x 100 msec.

#### ESC SP n

200 0	
[Name]	Set the character right space.
[Format]	ASCII ESC SP n
	Hex. 1B 20 n
	Decimal 27 32 n
[Range]	0 ≤ n ≤ 255
	Initial Value n = 0
[Description]	This command sets the size of space to right of character.
	Right space = n × [horizontal motion units].

#### ESC ! n

[Name]	Set print mode.						
[Format]	ASCII ESC ! n						
	Hex. 1B 21 n						
	Dec	mal	27 33 n				
[Range]	0 ≤	n ≤	255				
	Initia	ıl Valı	ue n = 0				
[Description]	This	This command selects print mode(s) with bits having following meanings.					
	This	com	mand affects	the Chi	nese chara	cters.(Only Double-height, Double-width, Und	erline)
		Bit	On / Off	Hex	Decimal	Function	
		0	Off	00	0	Character font A selected.	
			On	01	1	Character font B selected.	
		1	Off	00	0	Not used. Fixed to Off.	
	2 Off 00 0 Not used. Fixed to Off.						
	3		Off	00	0	Emphasized mode not selected.	
			On	08	8	Emphasized mode selected.	
		4	Off	00	0	Double-height mode not selected	
			On	10	16	Double-height mode selected	
		5	Off	00	0	Double-width mode not selected.	
			On	20	32	Double-width mode selected.	
		6	Off	00	0	Not used. Fixed to Off.	
		7	Off	00	0	Underline mode not selected.	
			On	80	128	Underline mode selected.	

#### ESC \$ n

LOUWII	
[Name]	Set absolute print position.
[Format]	ASCII ESC \$ nL nH
	Hex. 1B 24 nL nH
	Decimal 27 36 nL nH
[Range]	0 ≤ (nL + nH x 256) ≤ 65535 (0 ≤ nH ≤ 255, 0 ≤ nL ≤ 255)
[Description]	This command specifies the next print starting position in reference to the left edge of the print area.
And the second second second second	The printing start position is calculated using (nL + nH x 256) x (vertical or horizontal motion units).

#### ESC - n

200 11						
[Name]	Turn underline r	node on/off.				
[Format]	ASCII ESC	- n				
- 54 - 65	Hex. 1B	2D n				
	Decimal 27	45 n				
[Range]	0 ≤ n ≤ 1					
	Initial Value n =	0				
[Description]	This command	This command enables the print data following it to be printer out underlined.				
	This command affects the Chinese characters.					
	The underline m	ode varied depending on the following values of n:				
	n	Function				
	0	Turns off underline mode				
	1	Turns on underline mode, set at 1-dot thick				

#### ESC 2

LOOL	
[Name]	Select default line spacing.
[Format]	ASCII ESC 2
-	Hex. 1B 32
	Decimal 27 50
[Range]	N/A
[Description]	This command sets the default line spacing The default line spacing is approximately 4.25 mm, which
	is equivalent to 34 dots.

### ESC 3 n

LOCOII	
[Name]	Set line spacing.
[Format]	ASCII ESC 3 n
	Hex. 1B 33 n
	Decimal 27 51 n
[Range]	0 ≤ n ≤ 255
	Initial Value n = 34
[Description]	This command sets the line spacing using a following rule.
154 June 1654 June 201	Line spacing = n x (vertical or horizontal motion units)

#### ESC = n

[Name]	Select peripheral device
[Format]	ASCII ESC = n
	Hex. 1B 3D n
	Decimal 27 61 n
[Range]	0 ≤ n ≤ 255
	Initial Value n = 1

[Description]	Selects the perip	heral	device for which	ch the data	is effective	from the host computer.
		Bit	Function	<u>~0″</u>	<u>*1″</u>	٦
		7	Undefined			-
	1	6	Undefined	12	2	
	8	5	Undefined	12	S	
	1	4	Undefined	12		
	1	3	Undefined			
		2	Undefined	61		
		1	Undefined			
		0	Printer	Invalid	Valid	

#### ESC @

200 6	
[Name]	Initialize printer.
[Format]	ASCII ESC @
88 C 18	Hex. 1B 40
	Decimal 27 64
[Range]	N/A
[Description]	Clears data from the print buffer and sets the printer to its default settings.

#### ESC E n

[Name]	Turn emphasized mode on / off.				
[Format]	ASCII ESC E n				
	Hex. 1B 45 n				
	Decimal 27 69 n				
[Range]	0≤ n≤ 255				
	Initial Value n = 0				
[Description]	This command turns emphasized mode on or off by toggling the least significant bit of n like following.				
	When the LSB of n is 0, emphasized mode is turned off.				
	When the LSB of n is 1, emphasized mode is turned on.				

#### ESC J n

	200011			
Γ	[Name]	Print and feed paper.		
Γ	[Format]	ASCII ESC J n		
Ľ		Hex. 1B 4A n		
L		Decimal 27 74 n		
Γ	[Range]	$0 \le n \le 255$		
Γ	[Description]	This command prints the data in the print buffer and feeds the paper [n X vertical motion unit].		

#### ESC M n

[Name]	Select character font.						
[Format]	ASCII ESC M n	SC M n					
-	Hex. 1B 4D n						
	Decimal 27 77 n	l 27 77 n					
[Range]	n = 0, 1						
	Initial Value n = 0						
[Description]	This command selects only-byte character fonts using n as following.						
	20 27 24 24 24 24 24 24 24 24 24 24 24 24 24						
	n Function						
	0 Character font A selected						
	1 Character font B selected						

#### ESC R n

[Name]	Specify international character set.					
[Format]	ASCII ESC R n					
-	Hex. 1B 52 n					
	Decimal 2	27 82	n			
[Range]	0 ≤ n ≤ 16					
	Initial Value n = 0					
[Description]	<ol> <li>This command specifies international characters according to n values.</li> </ol>					
	_					
		n	Character set			
		0	USA			
		1	France			
		2	Germany			
	3 UK		UK			
		4 Denmark I				
		5	Sweden			
		6	Italy			
		7 Spain				
	8 Japan		Japan			
	9 Norway		Norway			
	10 Denmark II		Denmark II			
		11	Spain II			
		12	Latin America			
	Γ	13	Korea			
	Γ	14	Russia			
	Γ	15	Slavonic			
		16	User Define			

#### ESC \ n

200 (11	
[Name]	Set relative print position.
[Format]	ASCII ESC \ n
	Hex. 1B 5C n
	Decimal 27 92 n
[Range]	0 ≤ (nL + nH x 256) ≤ 65535 (0 ≤ nL 255, 0 ≤ nH ≤ 255)
[Description]	This command sets the print starting position based on the current position to $[(nL + nH \times 256) \times horizontal or vertical motion unit].$
	The print starting position is moved to (nL + nH x 256)in the right direction based on the current position.

#### ESC a n

[Name]	Position alignment.					
[Format]	ASCII ESC a n					
	Hex. 1B	1B 61 n				
	Decimal 27	97 n				
[Range]	0 ≤ n ≤2					
	Initial Value n = 0					
[Description]	This command specifies position alignment for all data in one line in standard mode, using n as					
	follows:	ollows:				
		n	Alignment			
		0	Left alignment			
		1	Center alignment			
		2	Right alignment			
## ESC c 3 n

20000.						
[Name]	Select paper out	sensor t	o enable at paper out signal output.			
[Format]	ASCII ESC c	3 n				
	Hex. 1B 63	3 33 n				
	Decimal 27 9	951 n				
[Range]	Specification: 0 ≤	n ≤ 3				
	Initial Value n = 0	C				
[Description]	Selects paper out	t detecto	or that outputs a paper out signal wh	en paper has	s run out.	
		Bit	Function	<i>``0″</i>	<i>``1″</i>	
		7	Undefined			
		6	Undefined			
		5	Undefined			
		4	Undefined			
		3	Undefined			
		2	Undefined			
		1	Paper roll near end detector	Invalid	Valid	ĺ
		0	Paper roll near end detector	Invalid	Valid	

## ESC d n

200 0 11	
[Name]	Print and feed n lines
[Format]	ASCII ESC d n
	Hex. 1B 64 n
	Decimal 27 100 n
[Range]	0 ≤ n ≤ 255
[Description]	This command feeds the paper by n lines after printing the data in the print buffer.

## ESC i

	2001	
Γ	[Name]	Full cut.
Γ	[Format]	ASCII ESC i
		Hex. 1B 69
		Decimal 27 105
	[Range]	N/A
Г	[Description]	This command executes a partial cut of the paper with one point left uncut.

### ESC m

[Name]	Partial cut.
[Format]	ASCII ESC m
	Hex. 1B 6D
	Decimal 27 109
[Range]	N/A
[Description]	This command executes a partial cut of the paper with one point left uncut.

## ESC p m t1 t2

[Name]	Specify pulse.
[Format]	ASCII ESC p m t1 t2
	Hex. 1B 70 m t1 t2
	Decimal 27 112 m t1 t2
[Range]	0 ≤ m ≤ 1,48 ≤ m ≤ 49
	0 ≤ t1 ≤ 255
	0 ≤ t2 ≤ 255

[Description]	This outputs a signal specified by t1 and t2 to the connector pin specified by m.		
	Drawer kick on time is set to t1 x 2 ms; off time is set to t2 x 2 ms.		
	m Connector Pin		
	0, 48 Drawer kick connector pin #2		
	1, 49 Drawer kick connector pin #5		

### ESC t n

[Name]	Select character code table.				
[Format]	ASCII ESC t n				
	Hex. 1	1B 74	n		
	Decimal	27 11	6 n		
[Range]	0 ≤ n ≤ 8				
	Initial Value	e n = 0			
[Description]	This comm	and sp	ecifies code page a	ccording to the value of n as follows:	
	This comm	and aff	ects the Chinese ch	naracter mode.	
		n	Character set		
		0	CP-437		
		1	Katakana		
		2	CP-850		
	3 CP-852				
		4	CP-860		
		5	CP-863		
		6	CP-865		
		7 CP-1252			
		8	User Define		

# ESC { n

200 [ 11				
[Name]	Turns upsi	de-dow	n printing mode on/off.	
[Format]	ASCII E	SC {	n	
	Hex.	1B 7B	n	
	Decimal	27 123	3 n	
[Range]	0 ≤ n ≤ 255	5		
	Initial Value	e n = 0		
[Description]	This command selects/deselects upside-down printing mode according to the least significant bit as			
	follows.			
		n	Upside-down mode	
		0	Turned off	
		1	Turned on	

### FSpnm

. e p				
[Name]	Print NV bit image.			
[Format]	ASCII FS p n m			
	Hex. 1C 70 n m			
	Decimal 28 112 n m			
[Range]	1 ≤ n ≤ 255			
	$0 \le m \le 3, 48 \le m \le 51$			

[Description]	This command prints NV bit image n using the mode specified by m as follows:			
		m	Mode	
		0, 48	Nornal	
		1, 49	Double-width	
		2, 50	Double-height	
		3, 51	Quadruple	

# FSqn[xL xH yL d1...dk]1...[xL xH yL d1...dk]n

[Name]	Define NV bit image.
[Format]	ASCII FS q n [xL xH yL d1dk]1[xL xH yL d1dk]n
	Hex. 1C 71 n [xL xH yL d1dk]1[xL xH yL d1dk]n
	Decimal 28 113 n [xL xH yL d1dk]1[xL xH yL d1dk]n
[Range]	1 ≤ n ≤ 255
	$1 \le (xL + xH \times 256) \le 54 \ (0 \le xL \le 54, xH=0)$ for 2 inch
	$1 \le (xL + xH \times 256) \le 72 \ (0 \le xL \le 72, xH=0)$ for 3 inch
	1 ≤ (yL + yH ×256) ≤ 128 (0 ≤ yL ≤ 128, yH=0)
	0 ≤ d ≤ 255
	$k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$
[Description]	This command defines the NV bit image in the NV memory.
	n denotes the number of the NV being defined.
	$(xL, xH)$ and $(yL, yH)$ set the number of dots in the norizontal and vertical directions to $[(xL + xH \times 25)$
	$x $ 8 and $[(yL + yH \times 256) x $ 8 respectively for the NV bit image.
	[Ex.:] When xL + xH × 256 = 64
	(xL+xHx256) x 8dot = 512 dot
	1 2 3 63 64
	<u>65 66 67 127 128</u>
	(yL + yH x 256) x 8dot
	1
	76543210
	MSB LSB

## GS ! n

00.11				
[Name]	Select character size.			
[Format]	ASCII GS ! n			
	Hex. 1D 21 n			
	Decimal 29 33 n			
[Range]	0 ≤ n ≤ 255			
	$(1 \leq \text{Vertical enlargement} \leq 8, 1 \leq \text{Horizontal enlargement} \leq 8)$			
	Initial Value n = 0			

[Description]	This command selects the character height and width using bits 0 to 3, and bits 4 to 7 respectively as					
	follows	s:				
		Dit	E		Q attitue a	
		Bit	Function	the second second the second	Setting	
		0	Specifies	the number of times	Refer to Table 2	
		1	normal to	nt size in the vertica	[Enlarged in vertical direction]	
		2	direction			
	-	3	Creating	the number of time	Pefer to Table 1	
	-	4	Specifies	the number of times	Feler to Table T	
	-	5	horizonta	direction	direction	
	-	7	nonzonia	uirection	direction]	
	L	1				
	This c	omma	nd affects	the Chinese characte	ers.	
	Table	1 [Enla	arged in ho	rizontal direction]		
		Hex	Decimal Enlargement			
		00	0 1 time(standard)			
		10	16	2 times		
		20	32	3 times		
		30	48	4 times		
		40	64	5 times		
		50	80	6 times		
		60	96 7 times			
		7	112 8 times			
	Table	2 [Enl:	araed in ve	rtical direction]		
	1 40.0	Hex	Decimal	Enlargement		
		00	0	1 time(standard)		
		01	1	2 times		
		02	2	3 times		
		03	3	4 times		
		04	4	5 times		
		05	5	6 times		
		06	6	7 times		
		07	7	8 times		

GS \* x y [d1...d(x x y x 8)]

[Name]	Define downloaded bit image.			
[Format]	ASCII GS * x y [d1d(x x y x 8)]			
	Hex. 1D 2A x y [d1d(x x y x 8)]			
	Decimal 29 42 x y [d1d(x x y x 8)]			
[Range]	$1 \le x \le 54$ (for 2 inch)			
	$1 \le x \le 72$ (for 3 inch)			
	$1 \le y \le 128$			
	0 ≤ d ≤ 255			



#### GS (ApLpHnm

[Name]	Test print.			
[Format]	ASCII GS ( A pL pH n m			
	Hex. 1D 28 41 pL pH n m			
	Decimal 29 40 65 pL pH n m			
[Range]	$\{pL+(pH\times256)\} = 2 (pL = 2, pH = 0)$			
	0 ≤ n ≤ 2			
	2 ≤ m ≤ 3			
[Description]	Executes the specified test print.			
	Specifies the parameter count following pL and pH in $(pL + (pH \times 256))$ bytes.			
	n Paper Type			
	0 Basic sheet (paper roll)			
	1 Paper Roll			
	2			
	<ul> <li>n specifies the paper to use in the test print shown in the tables below.</li> </ul>			
	m Type of Test Print			
	2 Printer Status (Self Print)			
	3 Rolling Pattern Print			

### GS / m

[Name]	Print downloaded bit image.
[Format]	ASCII GS / m
	Hex. 1D 2F m
	Decimal 29 47 m
[Range]	$0 \le m \le 3, 48 \le m \le 51$

[Description] This command prints the downloaded bit image defined by GS \* according to the mode denoted by m.

m	Mode	Vertical dot density(DPI)	Horizontal dot density(DPI)
0,48	Normal	203	203
1,49	Double-width	203	101
2,50	Double-height	101	203
3,51	Quadruple	101	101

#### GS B n

[Name]	Turns white/black reverse printing mode on / off.
[Format]	ASCII GS B n
	Hex. 1D 42 n
	Decimal 29 66 n
[Range]	0 ≤ n ≤ 255
	Initial Value n = 0
[Description]	This command selects white/black reverse printing mode by setting the least significant bit of n.
	When the LSB of n is 0, white/black reverse mode is turned off.
	When the LSB of n is 1, white/black reverse mode is turned on.

### GSHn

0.0		
[Name]	Select HRI character pr	int position.
[Format]	ASCII GS H n	
	Hex. 1D 48 n	
	Decimal 29 72 n	
[Range]	0≤ n≤ 3,48≤ n≤ 5	51
	Initial Value n = 0	
[Description]	Selects the printing pos	ition of HRI characters when printing bar codes.
	m	Printing Position
	0, 48	No print
	1,49	Above bar code
	2, 50	Below bar code
	3, 51	Above and below bar code(both)

## GSIn

GOTH					
[Name]	Transmission of	Printer ID.			
[Format]	ASCII GS I n				
	Hex. 1D 49	n			
	Decimal 29 73	n			
[Range]	1 ≤ n ≤ 3,49 ≤	n≤ 51,6	5≤ n≤ 69		
[Description]	Selects the printin	ng position	of HRI characters when	printing bar codes.	
	-			· · ·	
		n	Printer ID Type	Specifications	
		1, 49	Model ID	MB-1030	
		2, 50	Type ID	1030-XX	
		3, 51	ROM Version ID	Depends on the ROM version	
		65	Firmware Version	Depends on the firmware version	
		66	Manufacturer Name	MB-1030 System	
		67	Model Name	MB-1030	
		68	Serial Number	Depends on the serial number	
		69	Chinese Character	Taiwan Language Characters:	
			Types	TW_BIG5	
				Japanese Language Characters:	
				JP_SJIS	

GS L nL nH

	P. Contraction of the second se				
[Name]	Set left margin.				
[Format]	ASCII GS L nL nH				
	Hex. 1D 4C nL nH				
	Decimal 29 76 nL nH				
[Range]	0 ≤ nL ≤ 255, 0 ≤ nH ≤ 255				
	(nL + nH x 256)=0 (nL=0, nH=0)				
[Description]	This command sets the left margin specified to [(nL + nH x 256) x (horizontal motion units)].				
	Printable area				
	<u> </u>				
	<del>€ • • • • •</del>				
	Left margin Printing area width				

## GS P x y

[Name]	Set basic calculated pitch.
[Format]	ASCII GS P x y
	Hex. 1D 50 x y
	Decimal 29 80 x y
[Range]	0 ≤ x ≤ 255
	$0 \le y \le 255$
	Initial Value x = 203, y = 203: EPSON targeted model print head 203 DPI
[Description]	Sets the horizontal basic calculated pitch to approximately 25.4/xmm [(1/x) inch], and the vertical basic
	calculated pitch to approximately 25.4/ymm [(1/y) inch].
	x = 0: Returns the horizontal basic calculated pitch to its default value.
	y = 0: Returns the vertical basic calculated pitch to its default value.

## GS V m

[Nomo]	Cut papar			
[Name]	Cut paper.			
[Format]	ASCII GS V	m (n)		
	Hex. 1D 56	m (n)		
	Decimal 29 86	m (n)		
[Range]	m = 0, 1, 65, 66			
[Description]	Executes specifie	ed paper cu	t.	
		m	Function	
		0	Full cut	
		1	Partial cut (one point uncut)	
		65	Feeds paper to (cutting position + [n x basic calculated pitch]) and	
			performs a full cut	
		66	Feeds paper to (cutting position + [n x basic calculated pitch]) and	
			performs a partial cut	
			(one point uncut)	

# GS a n

[Name]	Enable/disable transmission of automatic status.
[Format]	ASCII GS a n
	Hex. 1D 61 n
	Decimal 29 97 n
[Range]	0≤ n≤ 255

[Description]	Selects the statuses that are targeted for transmission with the automatic status function (ASB:									
	Automatic Status	Back)	lack).							
		Bit	Status	es Tar	geted for A	SB	<i>``0″</i>	<u>`1″</u>		
		7	Black	Mark D	Detector		Invalid	Valid		
		6	Undefi	ined						
		5	Undefi	ined						
		4	Undefi	ined						
		3	Contin	uous F	aper Deteo	ctor	Invalid	Valid		
		2	Error				Invalid	Valid		
		1	ONLIN	IE/OFF	LINE Statu	IS	Invalid	Valid		
		0	Drawe	r kick d	connector p	in #3	Invalid	Valid		
	The printer inform	ation	transmitte	d is co	mprised of	4 byte	s as follows:			
	First byte	(printe	r informa	tion)	·					
	-	Bit	Off/On	Hex	Decimal	Func	tion			
		7	Off	00	0	Not u	used. Fixed to Off			
		6	Off	00	0	Pape	er is not being fed	by the paper feed button		
			On	40	64	Pape	er is being fed by t	he paper feed button		
		5	Off	00	0	Cove	er is close	• •		
			On	20	32	Cove	er is open			
		4	On	10	16	Not u	used. Fixed to On			
		3	Off	00	0	On-li	ne			
			On	08	8	Off-li	ne			
		2	Off	00	0	Draw	er kick-out conne	ctor pin 3 is LOW		
			On	04	4	Draw	er kick-out conne	ctor pin 3 is HIGH		
		1	Off	00	0	Not u	used. Fixed to Off			
		0	Off	00	0	Not	used. Fixed to Off			
	Second b	ovte(pr	inter infor	mation	)					
		Bit	Off/On	Hex	Decimal	Func	tion			
		7	Off	00	0	Not u	used. Fixed to Off			
		6	Off	00	0	Not u	used. Fixed to Off			
		5	Off	00	0	Not u	used. Fixed to Off			
		4	Off	00	0	Not u	used. Fixed to Off			
		3	On	08	8	Notu	used. Fixed to Off			
		2	On	04	4	Notu	used. Fixed to Off			
		1	On	02	2	Noti	used. Fixed to Off			
		0	On	01	1	Not	used. Fixed to Off			
	Third byte	e (pap	er sensor	inform	ation)					
		Bit	Off/On	Hex	Decimal	Func	tion			
		7	Off	00	0	Not	used. Fixed to Off			
		6	Off	00	0	Not	used. Fixed to Off			
		5	Off	00	0	Not	used. Fixed to Off			
		4	On	00	0	Not	used. Fixed to Off			
		23	Off	00	0	Pane	er end sensor: par	per present		
		2,0	On	00	12	Pane	r end sensor: pap	paper present		
		0.1	Off	00	0	Pane	r near and senso	r: paper adequate		
		0,1	On	03	3	Pane	r near end senso	r: paper near end		
	Fourth by	/te (na	per senso	or inform	mation)	. upc		- paper neur enu		
	rounnoy	Bit	Off/On	Hey	Decimal	Func	tion			
		7	Off	00	0	Not	ised. Fixed to Off			
		6	Off	00	0	Black	mark sensor status	3		
		5	Off	00	0	Not	used Fixed to Off	<i>«</i>		
		4	Off	00	0	Not	ised. Fixed to Off			
		3	On	08	8	Not	ised. Fixed to On			
		2	On	04	4	Not	read Fixed to On			
		1	On	02	2	Not	ised. Fixed to On			
		0	On	01	1	Not	ised. Fixed to On			
				01		11000				

GSfn	
[Name]	Select HRI character font.
[Format]	ASCII GS f n
	Hex. 1D 66 n
	Decimal 29 102 n
[Range]	n = 0, 1, 48, 49
	Initial Value n = 0
[Description]	Selects the printing position of HRI character font when printing bar codes.
	n Font
	0, 48 Selects Font A (12 x 24).
	1, 49 Selects Font B (9 x 17).

## GShn

001111	
[Name]	Set bar code height.
[Format]	ASCII GS h n
	Hex. 1D 68 n
	Decimal 29 104 n
[Range]	1 ≤ n ≤ 255
	Initial Value n = 162
[Description]	Sets bar code height to n dots.

# GS k m d1 ... dk NUL.2.gs k m n d1 ... dk

[Name]	Print bar code.
[Format]	1. ASCII GS k m d1dk NUL
	Hex. 1D 6B m d1dk NUL
	Decimal 29 107 m d1dk NUL
	2. ASCII GS k m n d1dk NUL
	Hex. 1D 6B m n d1dk NUL
	Decimal 29107 m n d1dk NUL
[Range]	$1.0 \le m \le 6$ The definition region of k and d differ according to the bar code type.
	2. 65 ≤ m ≤ 73 The definition region of n and d differ according to the bar code type.

[Description]	Selects bar code type and prints bar codes.						
	1:						
		m	Bar Code Type	Defined region of k	Defined region of d		
		0	UPC-A	11≤ k≤ 12	48≤ d≤ 57		
		1	UPC-E	11≤ k≤ 12	48≤ d≤ 57		
		2	JAN13 (EAN13)	12≤ k≤ 13	48≤ d≤ 57		
		3	JAN8 (EAN8)	7≤ k≤ 8	48≤ d≤ 57		
		4	CODE39	1≤ k≤ 255	48 ≤ d ≤ 57,65 ≤ d ≤ 90		
					32, 36, 37, 43, 45, 46, 47		
		5	ITF	2≤ k≤ 254	48≤ d≤ 57		
				(However, this is an			
				even number.)			
		6	CODABAR	1≤ k≤ 255	48 ≤ d ≤ 57,65 ≤ d ≤ 68		
					36, 43, 45, 46, 47, 58		
	2	2:					
		m	Bar Code Type	Defined region of n	Defined region of d		
		65	UPC-A	11 ≤ n ≤ 12	48 ≤ d ≤ 57		
		66	UPC-E	11≤ n≤ 12	48≤ d≤ 57		
		67	JAN13 (EAN13)	12 ≤ n ≤ 13	48 ≤ d ≤ 57		
		68	JAN8 (EAN8)	7≤ n≤ 8	48≤ d≤ 57		
		69	CODE39	1 ≤ n ≤ 255	48 ≤ d ≤ 57,65 ≤ d ≤ 90		
					32, 36, 37, 43, 45, 46, 47		
		70	ITF	2≤ n≤ 254	48≤ d≤ 57		
				(However, this is an			
				even number.)			
		71	CODABAR	1≤ n≤ 255	48 ≤ d ≤ 57,65 ≤ d ≤ 68		
					36, 43, 45, 46, 47, 58		
		72	CODE93	1≤ n≤ 255	0≤ d≤ 127		
		73	CODE128	2 ≤ n ≤ 255	0≤ d≤ 127		

# GSrn

00111	
[Name]	Transmission of status.
[Format]	ASCII GS r n
	Hex. 1D 72 n
	Decimal 29 114 n
[Range]	n = 1, 2

[Description]	Sends the specified status.								
	Detector Status (N=1)								
		Bit	Status	<i>``0″</i>	<i>``1″</i>				
		7	Fixed at 0						
		6	Undefined						
		5	Undefined						
		4	Fixed at 0						
		3	Paper roll end detector	Has Paper	Paper out				
		2	Paper roll end detector	Has Paper	Paper out				
		1	Paper roll near end detector	Has Paper	Paper out				
		0	Paper roll near end detector	Has Paper	Paper out				
	Drawer	Kick Co	onnector Status (N=2)						
		Bit	Status	<i>``0″</i>	<b>`</b> 1″				
		7	Fixed at 0						
		6	Undefined						
		5	Undefined						
		4	Fixed at 0						
		3	Undefined						
		2	Undefined						
		1	Undefined						
		0	Drawer kick connector pin #3	``L″	``Н″				

# GS v 0 m xL Hy yH d1 ... dk

[Name]	Print raste	r bit ima	ages.										
[Format]	ASCII (	GS v	1 0	n xL	хH	уL	yН	d1d	lk				
	Hex.	1D 76	30 r	n xL	хH	уL	yН о	d1c	lk				
	Decimal	29 118	48 r	n xL	хH	уL	yH (	d1c	lk				
[Range]	m = 0, m =	= 48											
	0≤ xL≤	54(for 2	2 inch)										
	0≤ xL≤	72(for 3	3 inch)										
	0 ≤ xH ≤	0											
	0≤ yL≤	255											
	0 ≤ yH ≤	3											
	0 ≤ d ≤ 2	255											
	k = (xL+x⊦	1×256)	× (yL+	yH×25	6) H	owe	ver, k	$\neq$ 0					
[Description]	Prints rast	er meth	od bit	image	s usi	ing n	node	m.					
			m	Mo	de			D	ensity c	of Vert. D	Dir.	Density of Hor. Dir.	
								D	ots			Dots	
			0, 48	Noi	mal	Mod	е	20	D3 DPI			203 DPI	
	[Ex.:]		V	/hen x	L + XI	H × 2	256 =	64					
	•		(xL+x	Hx256)	x 8do	t = 51	12 dot		-				
					2				60	64			
	T	65	6	3	3 67		•••••		127	128			
									121	120	(yL	+ yH x 256) dot	
	V								k-1	ĸ			
									1				
							[	7 6 !	5 4 3 2	2 1 0			
							1	ASB		LSB			

GS	w	n
<u> </u>	•••	

[Name]	Set bar code	Set bar code horizontal size.						
[Format]	ASCII GS	w n						
	Hex. 1D	77 n						
	Decimal 29	119 n						
[Range]	1≤ n≤ 6							
	Initial Value n	= 2						
[Description]	Sets the bar of	ode hori	izontal size.					
		n	Multi-level Bar Code	Binary Level Bar Code				
			Module Width [mm]	Fine Element Width[mm	Thick Element	1		
					Width[mm]			
		1	0.141	0.141	0.423			
		2	0.282	0.282	0.706			
		3	0.423	0.423	1.129			
		4	0.564	0.564	1.411			
		5	0.706	0.706	1.834			
		6	0.847	0.847	2.258			

## 4. KANJI CONTROL COMMAND DETAILS

FS	I.	n

[Name]	Batch specify Chinese character print mode.							
[Format]	ASCII GS ! n							
	Hex. 1C 21	n						
	Decimal 28 33	n						
[Range]	0≤ n≤ 255							
	Initial Value n = 0							
[Description]	Batch specifies th	ie Ch	inese character print mo	ode.				
	This command af	fects	all characters.					
		Bit	Function	<i>``0″</i>	<b>`</b> 1″			
		7	Underline	Off	On			
		6	Undefined					
		5	Undefined					
		4 Undefined						
		3	Double tall expanded	Off	On			
		2	Expanded wide	Off	On			
		1	Undefined					
		0	Undefined					

FS &

FS

[hlama]	Opened Objector shows the mode
[Name]	Cancel Chinese character mode.
[Format]	ASCII GS .
	Hex. 1C 2E
	Decimal 28 46
[Range]	N/A
[Description]	Cancels Chinese characters mode.
	This command affects the character code table, it is set to the initial value (CP-437).

# 3-3-1-1. Character Code Table

**ESC/POS Standard Codes** 

Katakana



**Notes:** The character code tables show only character configurations. They do not show actual print pattern.

















# **International Characters**

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
U.S.A	#	\$	0	Ε	\	]	^	r	{		}	~
France	#	\$	à	ō	Ç	ĝ	^	۲.	é	à	è	
Germany	#	\$	ĝ	Ä	Ö	Ü	^	`	ä	ö	ü	ß
UK	£	\$	0	E	1	]	٨	`	{		}	~
Denmark I	#	\$	0	Æ	ф	Â	^	v	æ	ø	â	~
Swden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	0	0	1	é	^	ù	à	Ò	è	ì
Spain	Pt	\$	0	ī	Ñ	i	^	`		ñ	}	~
Japan	#	\$	0	[	¥	]	^	`	{	1	}	~
Norway	#	Þ	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	\$	â	ī	Ñ	i	é	1	í	ñ	6	ú
Latin America	#	\$	á	1	Ñ	ż	é	ü	í	ñ	ó	ú
Korea	#	\$	0	[	₩	]	٨	1	{		}	~
Russia	#	\$	0	Γ	1	]	^	`	Ĭ.		)	~
Slavonic	#	\$	0	Ε	/	]	^	`	ľ	1	}	~

# 3-3-1-2. Japanese Language Codes (Shift-JIS Codes)

0123456789ABCDEF 0123456789ABCDEF 8140 ·:;?1 8240 0 ヽヾゝゞ〃全々〆0----8150 8250 123456789 ~ || | ..... " 6539 8160 000 ABCDEFGHIJKLMNOP { 8260 8170 } ⟨⟩ 《》「」『』 () +-±× 8270 QRSTUVWXYZ ÷=≠<>≦≧∞∴♂♀°′″°℃¥ 8180 8280 abcdefghijklmno 8190 \$¢£%#&\*@§☆★O●@◇◆ 8290 pqrstuvwxyz 81A0 82A0 あいいううぇえぉおかがきぎくぐけ 81BØ EBEDEDUN 82BØ げこごさざしじすずせぜそぞただち 8100 AVJ⇒⇔∀∃ 8200 ぢっつづてでととなにぬねのはばば 81D0  $\angle \bot \frown \partial \nabla \equiv$ 82DØ ひびぴふぶぶへべぺほぼぽまみむめ 81E0 ≒≪≫√∽∝∵∫∬ 82EØ もゃやゅゆょよらりるれろゎわゐゑ 81F0 å‰#b⊅†‡¶ 82FØ をん O

8340 8350 8360 8370 8380 8390 8380 8390 8380 8380 8380 838	0 1 2 3 4 5 6 7 8 9 A B C D E F p p r 4 - q - p - x - x + x + x + y + y + y + y + y + y + y +	8440 8450 8460 8470 8480 8490 8490 8490 8490 8490 8490 849	О 1 2 3 4 5 6 7 8 9 А В С D Е F А Б В Г Д Е Ё Ж З И Й К Л М Н О П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ы Ь ЭЮ Я а б в г д е ё ж з и й к л м н о п р с т У Ф Х ц ч ш щ Ъ Ы Ь Э Ю Я
8540 8550 8560 8580 8590 8590 8590 8590 8590 8590 859	<u>0123456789ABCDEF</u>	8640 8650 8660 8670 8680 8690 8680 8680 8680 8680 8680 868	0123456789ABCDEF

	0123456789ABCDEF		0123456789ABCDEF
8740 8750 8760 8770 8780 8780 8780 8780 8760 876		8840 8850 8860 8870 8880 8880 8880 8880 8880 888	亜 唖娃阿哀愛挨姶逢葵茜穐悪握渥旭葦 芦鯵梓圧斡扱宛姐虻飴絢綾鮎或粟袷 安庵按暗案闇鞍杏以伊位依偉囲夷委 威尉惟意慰易椅為畏異移維緯冑萎衣 調違遺医井亥域育郁磯一壱溢逸稲茨 芋鰯允印咽員因姻引飲淫胤蔭
8940 8950 8960 8970 8980 8990 8980 8980 8900 8900 890	0123456789ABCDEF 院陰隱韻吋右宇烏羽迂雨卯鵜窺丑碓 臼渦噓唄鬻蔚鰻姥僳浦瓜閠噂云運雲 荏餌叡営嬰影咉曳栄永泳洩瑛盈穎頴 英衛詠鋭液疫益駅悦謁越閱檍厭円 園堰奄宴延怨掩援沿演炎焔煙燕猿緣 艷苑蘭遠鉛鴛塩於汚甥凹央奥往応押 旺橫欧殴王翁襖鴬鴎黄岡沖荻億屋憶 臆桶牡乙俺卸恩温穩音下化仮何伽価 佳加可嘉夏嫁家寡科暇果架歌河火珂 褐禾稼箇花苛茄荷華巢蝦課嘩貨迦過 霞蚊俄峓我牙画臥芽蛾賀雅餓駕介会 解回塊壞廻快怪悔恢懷戒拐改	8440 8450 8460 8470 8480 8490 8480 8480 8480 8480 8480 848	0123456789ABCDEF 魁晦城海灰界皆絵芥蟹開階貝凱劾外 咳害崖慨概涯碍蓋街該鎧骸浬毊蛙垣 柿蛎鈎劃嚇各廓拡撹格核殻獲確獲覚 角赫較郭閣隔革学岳楽額顎掛笠樫 橿梶鰍潟割喝恰括活渴滑葛褐轄且鰹 叶椛樺鞄株兜電蒲釜鎌噛鴨栢茅萱粥 刈苅瓦乾侃冠寒刊勘勧巻喚堪姦完官 寛干幹患感慣憾換敢柑桓棺款歓汗漢 澗潅環甘監看竿管簡緩缶翰肝艦莞観 諌貫還鑑間閑関陷韓館舘丸含岸巌玩 癌眼岩翫贋雁頑顏願企伎危喜器基奇 嬉寄岐希幾忌揮机旗既期棋葉
8B40 8B50 8B60 8B70 8B80 8B90 8B80 8B80 8B80 8B80 8B80 8B8	0123456789ABCDEF 機帰毅気汽畿祈季稀紀徽規記貴起軌 輝飢騎鬼亀偽儀妓宜戲技擬欺犠疑祇 義蟻誼議掬菊鞠吉吃喫桔橘詰砧杵黍 却客脚虐逆丘久仇休及吸宮弓急救 朽求汲泣灸球究窮笈級糾給旧牛去居 巨拒拠挙渠虛許距鋸漁禦魚亨享京供 侠僑兇競共凶協匡卿叫喬境峡強彊怯 恐恭挟教橋況狂狭矯胸脅禦蕎郷鏡響 饗驚仰凝尭暁業局曲極玉桐粁僅勤均 巾錦斤欣欽琴禁禽筋緊芹菌衿襟謹近 金吟銀九俱句区狗玖矩苦躯駆駈駒具 愚虞喰空偶寓遇隅串櫛釧屑屈	8C40 8C50 8C60 8C90 8C90 8C80 8C80 8C0 8C0 8C0 8C0 8C0 8C0 8C0	0123456789ABCDEF 掘窟沓靴轡窪熊隈粂栗緑桑鍬勲君薫 訓群軍郡卦袈祁係傾刑兄啓圭珪型契 形径恵慶慧憩揭携敬景桂渓畦稽系経 継繋罫茎荊蛍計詣警軽頚鶏芸迎鯨 劇戟撃激隙桁傑欠決潔穴結血訣月件 儉倦健兼券剣喧圕堅嫌建憲懸拳捲検 権牽犬献研硯絹県肩見謙豎軒遣鍵險 顕験鹸元原厳幻弦减源玄現絃舷言諺 限乎個古呼固姑孤己庫弧戸故枯湖狐 糊袴股胡菰虎跨跨鈷雇願鼓五互伍午 呉吾娯後御悟梧檎瑚碁語誤護醐乞鯉 交佼侯候倖光公功効勾厚口向

Page:3-48

PA-6610 USER'S MANUAL

## 0123456789ABCDEF

8D40	后喉坑垢好孔孝宏工巧巷幸広庚康弘
8D50	恒慌抗拘控攻昂晃更杭校梗構江洪浩
8D60	港溝甲皇硬稿糠紅紘絞綱耕考肯肱腔
8D70	膏航荒行衡講貢購郊酵鉱砿鋼閤降
8D80	項香高鴻剛劫号合壕拷濠豪轟麹克刻
8D90	告国穀酷鵠黒獄漉腰甑忽惚骨狛込此
8DA0	頃今困坤墾婚恨懇昏昆根梱混痕紺艮
8DBØ	魂些佐叉唆嵯左差查沙瑳砂詐鎖裟坐
8DC0	座挫債催再最哉塞妻宰彩才採栽歲済
8DDØ	災采犀砕砦祭斎細菜裁載際剤在材罪
8DEØ	財冴坂阪堺榊肴咲崎埼碕鷺作削咋搾
8DFØ	昨朔柵窄策索錯桜鮭笹匙冊刷

### 0123456789ABCDEF

察拶撮擦札殺薩雑皐鯖捌錆鮫皿晒三 傘参山惨撒散桟燦珊産算纂蚕讃賛酸 餐斬暫残仕仔伺使刺司史嗣四士始姉 姿子屍市師志思指支孜斯施旨枝止 死氏獅祉私糸紙紫肢脂至視詞詩試誌 諮資賜雌飼歯事似侍児字寺慈持時次 滋治爾璽痔磁示而耳自蒔辞汐鹿式識 8EBØ 鴫竺軸宍雫七叱執失嫉室悉湿漆疾質 8ECØ 実蔀篠偲柴芝屡蕊縞舎写射捨赦斜煮 8EDØ 社紗者謝車遮蛇邪借勺尺杓灼爵酌釈 8EEØ 錫若寂弱惹主取守手朱殊狩珠種腫趣 8EFØ 酒首儒受呪弄授樹綬需囚収周

	RAR AFRAZONA DODEE		
	0123456789ABCDEF		0123456789ABCDEF
8F40	宗就州修愁拾洲秀秋終繡習臭舟蒐衆	9040	拭植殖燭織職色触食蝕辱尻伸信侵唇
8F50	襲讐蹴輯週酋酬集醜什住充十従戎柔	9050	娠寝審心慎振新晋森榛浸深申疹真神
8F60	汁渋獣縱重銃叔夙宿淑祝縮粛塾熟出	9060	秦紳臣芯薪親診身辛進針震人仁刃塵
8F70	術述俊峻春瞬竣舜駿准循旬楯殉淳	9070	王尋甚尽腎訊迅陣靭笥諏須酢図廚
8F80	準潤盾純巡遵醇順処初所暑曙渚庶緒	9080	逗吹垂帥推水炊睡粋翠衰遂酔錐鍾随
8F90	署書薯藷諸助叙女序徐恕鋤除傷償勝	9090	瑞髓崇嵩数枢趨雛据杉椙菅頗雀裾澄
8FAØ	匠升召哨商唱嘗奨妾娼宵将小少尚庄	90A0	摺寸世瀬畝是凄制勢姓征性成政整星
8FB0	床廠彰承抄招掌捷昇昌昭晶松梢樟樵	90B0	晴棲柄正清牪牛盛精聖声製西誠誓請
8FCØ	沼消涉湘焼焦照症省硝礁祥称章笑粧	9000	浙醒青静斉税脆隻席惜戚斥昔析石精
8FDØ	紹肖菖蒋蕉衝裳訟証詔詳象賞醤鉦鍾	90D0	籍着脊青赤跡隋碩切拙接摂折設窃筋
8FEØ	鐘障鞘上丈丞乗冗剰城場壤嬢常情擾	90F0	說雪絶舌蝉仙先千占宣夷尘川戦扇擢
8FFØ	条杖浄状畳穰蒸譲醸綻嘱埴飾	90F0	於 <u>一</u> 紀日本他的「日 <u>一</u> 等久/州和湖滨 於本泉浅洗染潜前惊旋空箭線
		3010	任旧水戊加米伯杰榭加芬时脉

8E40

8E50

8E60

8E70

8E80

8E90

8EA0

	0123466789ABCDEF		0123456789ABCDEF
9140	繊羨腺舛船薦詮賎践選遷銭銑閃鮮前	9240	叩但達辰奪脱巽竪辿棚谷狸鱈樽誰丹
9150	善漸然全禅繕膳糎噌塑岨措曾曽楚狙	9250	単嘆坦担探旦歎淡湛炭短端箪綻耽胆
9160	疏疎礎祖租粗素組蘇訴阻遡鼠僧創双	9260	蛋誕鍛団壇弾断暖檀段男談値知地弛
9170	叢倉喪壮奏爽宋層匝惣想捜掃挿掻	9270	恥智池痴稚置致蜘遅馳築畜竹筑蓄
9180	操早曹巣槍槽漕燥争痩相窓糟総綜聡	9280	逐秩窒茶嫡着中仲宙忠抽昼柱注虫衷
9190	草荘葬蒼藻装走送遭鎗霜騷像増憎臓	9290	註酎鋳駐樗瀦猪苧著貯丁兆凋喋寵帖
91A0	蔵贈造促側則即息捉束測足速俗属賊	92A0	帳庁弔張彫徵懲挑暢朝潮牒町眺聴脹
91B0	族続卒袖其揃存孫尊損村遜他多太汰	92BØ	腸蝶調諜超跳銚長頂鳥勅捗直朕沈珍
91C0	詑唾堕妥惰打柁舵楕陀駄騨体堆対耐	9200	賃鎮陳津墜椎槌追鎚痛通塚栂掴槻佃
91DØ	岱帯待怠態戴替泰滞胎腿苔袋貸退逮	92DØ	遺柘辻蔦綴鍔椿潰坪壷嬬紬爪吊釣鶴
91E0	隊黛鯛代台大第醌題鷹滝瀧卓啄宅托	92EØ	亭低停偵剃貞呈堤定帝底庭廷弟悌抵
91FØ	択拓沢濯琢託鐸濁諾茸凧蛸只	92FØ	挺提梯汀碇禎程締艇訂諦蹄逓

PA-6610 USER'S MANUAL

Page:3-49

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9340	邸鄭釘鼎泥摘擢敵滴的笛適鏑溺哲徹	9440	如尿韮任妊忍認濡禰祢寧葱猫熱年念
9350	撤轍迭鉄典填天展店添纏甜貼転顛点	9450	捻撚燃粘乃廼之埜囊悩濃納能脳膿農
9360	伝殿澱田電兎吐堵塗妬屠徒斗杜渡登	9460	覗蚤巴把播覇杷波派琶破婆罵芭馬俳
9370	菟賭途都鍍砥砺努度土奴怒倒党冬	9470	廃拝排敗杯盃牌背肺輩配倍培媒梅
9380	凍刀唐塔塘套宕島嶋悼投搭東桃梼棟	9480	楳煤狽買売賠陪這蝿秤矧萩伯剥博拍
9390	盗淘湯涛灯燈当痘祷等答筒糖統到董	9490	柏泊白箔粕舶薄迫螺漠爆縛莫駁麦函
93A0	蕩藤討謄豆踏逃透鐙陶頭騰鬪働動同	94A0	箱硲箸肇筈櫨幡肌畑畠八鉢溌発醗髪
93BØ	堂導憧撞洞瞳童胴萄道銅峠鴇匿得徳	94BØ	伐罰抜筏閥鳩噺塙蛤隼伴判半反叛帆
93CØ	涜特督禿篤 <b>毒独読栃橡</b> 凸突椴届 鳶苫	94CØ	搬斑板氾汎版犯班畔繁般藩販範釆煩
93DØ	寅酉瀞噸屯惇敦沌豚遁頓呑曇鈍奈那	94D0	頒飯挽晩番盤磐蕃蛮匪卑否妃庇彼悲
93EØ	内乍凪薙謎灘捺鍋楢馴縄畷南楠軟難	94E0	扉批披斐比泌疲皮碑秘緋巃肥被誹費
93FØ	汝二尼弐迩匂賑肉虹廿日乳入	94FØ	避非飛樋簸備尾微枇毘琵眉美

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9540	鼻柊稗匹疋髭彦膝菱肘弼必畢筆逼桧	9640	法泡烹砲縫胞芳萌蓬蜂褒訪豐邦鋒飽
9550	姫媛紐百謬俵彪標氷漂瓢票表評豹廟	9650	鳳鵬乏亡傍剖坊妨帽忘忙房暴望某棒
9560	描病秒苗錨鋲蒜蛭鰭品彬斌浜瀕貧賓	9660	冒紡肪膨謀貌貿鉾防吠頬北僕卜墨撲
9570	頻敏瓶不付埠夫婦富富布府怖扶敷	9670	朴牧睦穆釦勃没殆堀幌奔本翻凡盆
9580	斧普浮父符腐膚芙譜負賦赴阜附侮撫	9680	摩磨魔麻埋妹昧枚每哩槙幕膜枕鮪柾
9590	武舞葡蕪部封楓風瞢蕗伏副復幅服福	9690	鱒桝亦俣又抹末沫迄侭繭麿万慢満漫
95A0	腹複覆淵弗払沸仏物鮒分吻噴墳憤扮	96A0	蔓味未魅巳箕岬密蜜湊蓑稔脈妙粍民
95BØ	焚奮粉糞紛雰文間丙併兵塀幣平弊柄	96BØ	眠務夢無牟矛霧鵡椋婿娘冥名命明盟
9500	並蔽閉陛米頁僻壁癖碧別瞥蔑箆偏変	96C0	迷銘鳴姪牝滅免棉綿緬面麺摸模茂妄
95DØ	片篇編辺返遲便勉娩弁鞭保舖鋪圃捕	96D0	孟毛猛盲網耗蒙儲木黙目杢勿餅尤戻
95EØ	步甫補輔穂募墓慕戊暮母簿菩倣俸包	96E0	籾貰問悶紋門匁也冶夜爺耶野弥矢厄
95FØ	呆報奉宝峰峯崩庖抱捧放方朋	96FØ	役約薬訳躍靖柳薮鑓愉愈油癒
			(ii) yes and yes of the second state in the enderstate of second second 2014 (1994).

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諭輸唯佑優勇友宥幽悠憂揖有柚湧涌	9840	蓮連錬呂魯櫓炉賂路露労婁廊弄朗楼
猶猷由祐裕誘遊邑郵雄融夕予余与誉	9850	榔浪漏牢狼篭老聾蝋郎六麓禄肋録論
輿預傭幼妖容庸揚摇擁曜楊様洋溶熔	9860	倭和話歪賄脇惑枠鷲亙亘鰐詫藁蕨椀
用窯羊耀葉蓉要謡踊遥陽養慾抑欲	9870	湾碗腕
沃浴翌翼淀羅螺裸来萊頼雷洛絡落酪	9880	
乱卵嵐欄濫藍蘭覧利吏履李梨理璃痢	9890	弌
裏裡里離陸律率立葎掠略劉流溜琉留	98A0	丐丕个丱、丼丿乂乖乘亂亅豫亊舒弍
硫粒隆竜龍侶慮旅虜了亮僚両凌寮料	98BØ	于亞亟一亢亰毫亶从仍仄仆仂仗仞仭
梁涼猟療瞭稜糧良諒遼量陵領力緑倫	98CØ	仟价伉佚估佛佝佗佇佶侈侏侘佻佩佰
厘林淋燐琳臨輪隣鱗鳞瑠塁涙累類令	98DØ	侑佯來侖儘俔俟俎俘俛俑俚俐俤俥倚
伶例冷励嶺怜玲礼苓鈴隷零霊麗齡暦	98E0	倨倔倪倥倅伜俶倡倩倬俾俯們倆偃假
歷列劣烈裂廉恋憐漣煉簾練聯	98F0	會偕偐偈做偖偬偸傀傚傅傴傲
	OT23456789ABCDEF 諭輸唯佑優勇友宥幽悠憂損有柚湧涌 猶獻由枯裕誘遊邑郵雄融夕予余与誉 輿預傭幼妖容庸揚揺擁曜楊樣洋溶熔 用窯羊耀葉蓉要謡踊遥陽養慾抑欲 沃浴翌翼淀羅螺裸来萊頼雷洛絡落酪 乱卵嵐欄濫藍蘭覧利吏履李梨理璃痢 裏裡里離陸律率立律掠略劉流溜琉留 硫粒隆竜龍侣慮旅虜了亮僚両凌寮料 梁涼猟療瞭稜糧良諒遼量陵領力緑倫 厘林淋燐琳臨輪隣鱗麟瑠塁涙累類令 伶例冷励嶺怜玲礼苓鈴隷零霊麗齡曆 歴列劣烈裂廉恋憐漣煉簾練聯	O123456789ABCDEE         諭輸唯佑優勇友宥幽悠憂揖有柚湧涌       9840         猶猷由祐裕誘遊邑郵雄融夕予余与誉       9850         輿預傭幼妖容庸揚揺擁曜楊樣洋溶熔       9860         用窯羊耀葉蓉要謡踊遥陽貴慾抑欲       9870         沃浴翌翼淀羅螺裸来萊頼雷洛絡落略       9830         乱卵嵐欄溢藍蘭覧利吏履李梨理璃痢       9830         裏裡里離陸律率立律掠略劉流溜流留       9840         硫粒隆竜龍侶慮旅虜了亮僚両凌寮料       9830         梁涼猟療瞭稜糧良諒遼量陵領力緑倫       9800         厚林淋燐琳臨輪隣鱗鱗瑠塁涙絮類令       9800         9800       9800         夏夏夏夏夏夏夏月       9810         9810       9820         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810       9810         9810

Page:3-50

PA-6610 USER'S MANUAL

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9940	<b>僉</b> 僊傳僂僖僞 <b>僥</b> 僭僭僅價僵憸儁儂儖
9950	儕儔儚儡儺儷儼儻儿兀兒兌兔兢竸兩
9960	兪兮冀冂囘册冉冏冑冓冕冖冤寇冢寫
9970	冪ン决冱冲冰况冽凅凉凛几處凩凭
9980	凰凵凾刄刋刔刎刧剛刮刳刹剏剄剋剌
9990	剞剔剪剴剩剳剿剽劍劔劒剱劈劑辨辧
99A0	劬劭劼劵勁勍勗勞勣勦飭勠勳勵勸勹
99BØ	匆匈甸匍匐匏七匚匣匯匱匳匸區卆卅
99CØ	世卉卍凖卞卩卮夘卻卷厂厖厠厦厥厮
99DØ	廠厶參簒雙叟曼燮叮叨叭叺吁吽呀听
99EØ	吭吼吮呐吩吝呎咏呵咎呟呱呷呰咒呻
99FØ	咀呶咄咐咆哇咢咸咥咬哄哈咨

○123456789ABCDEF 咫哂咤咾咼哘哥哦唏嘻哽哮哭哺哢唹 哐啣啌售啜啅啖啗唸唳啝喙喀咯喊喟 當啾喘唧單啼喃喩喇喨鳴嗅嗟嗄嗜嗤 嗔嘔嗷嘖嗾嗽嘛嗹噎器營嘴嘶嘲嘸 噫喋嘯噬噪嗃嚀嚊嚠嚔嚏嚥嚮嘤嚴囂 嚼囁唯囀囈囎囑囓□囮囹圀圄圍圈 國圍圓團圖嗇闓圦圷圸坎圻址坏坩埀 垈坡坿垉垓垠垳垤垪垰埃埆埔埒埓堊 埖埣堋堙堝塲堡塢塋塰毇塒堽塹墅壛 墟嫜嘷嬙墻墡墮壅壓壑壔獷壨摨嬕壞

壟壯壺壹壻壺壽久久夐夛梦夥夬夭夲

夸夾竒奕奐奎奚奘奢奠奧獎奩

340 350 360 370 380 380 380 380 380 380 380 380 380 38	O123456789ABCDEF 奸妁妝侯侫妣妲姆姨姜妍姙姚娥娟硰 娜娉娚婀婬婉娵娶婢棻媚媹孈嫋嫂媽 媽嫗嫦嫩嫖嫺嫻嬌嬋嬖嬲嫐嬪嬶嬾嬢 孅孀子孕孚孛拏孩孰孶孵學斈孺宀 它宦宸寃寇寉寔寐寤實寢寞寥寫寰實 竇尅將專對尓尠尢尨尸尹屁屆屎屓屐 屏孱屬屮乢屶屹岌岑岔妛岫岻岶岼岷 峅岾峇峙峩峡峺峭嶌峪崋崕崗嵜崟崛 崑崔崢崚崙崘嵌嵒嵎嵋嵬嵳嵶嶇嶄嶂 嶢嶝嶬嶮嶽孉嶷嶼巉虦巓巒巖巛巫已 巵帋帚帙帑帛帶帷幄幃幀幎幗幔幟幢	9C40 9C50 9C70 9C80 9C90 9C80 9C80 9C0 9C0 9C0 9C0 9C0	0123456789ABCDEF 廖廣廝廚廛廢廡廨廩廬廱廳康廴廸廾 弃弉彝彝弋弑弖弩項弸彁彈彌彎弯与 彖彗彙ジ彭彳彷往徂彿徊很徑徇從徙 徘徠徨徭徼忖忻忤忸忱忝悳忿怡恠 怙怐怩怎怱怛怕怫怦快怺恚恁悋恷悔 恊恆恍恣恃恤恂恬恫恙悁悍惧悃悚悄 馂悖悗悒悧悋惡悸惠惓悴忰悽惆悵憜 慍愕愆惶惷愀惴惺愃愡惻匘愍愎愍戂 愨愧慊愿愼愬愴愽慂傈慳懅慘慙摲絕 慴慯慥慱懄慝憹慵藼慭憇憬憔憚藘憑 憪憮懌懊應懷慨懃懆噡懋罹懍懦濍懶
3E0 3F0	穒噊閠喴颒隓麲喓嚵號顀勏瞂巛垐乚 巵帋帚帙帑帛帶帷幄幃幀幎槶幔幟幢 幣幇幵并幺麼广庠廁廂廈廐廏	9CE0 9CF0	懎憰踸憳闧急际碿巚忘恣屎隭厈忑怎 憪幠懌愌應懷懈懃懆憺懋罹懍툶濍懶 懺懴懿慛懼懾戀戈戉戍戌菚戛

9A40

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9ACØ 9ADØ

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9D40	憂戡截戮戰戲戳扁扎扞扣扛扠扨扼抂	9E40	曄暸曖曚曠昿曦曩曰曵槝朏朖朞朦朧
9D50	抉找抒抓抖拔抃抔拗拑抻拏拿拆擔拈	9E50	霸朮束朶杁朸朷杆杞杠杙杣杤枉杰枩
9D60	拜拌拊拂拇抛拉挌拮拱挧挂挈拯拵捐	9E60	杼杪枌枋枦枡枅枷柯枴柬枳柩枸柤柞
9D70	挾捍搜捏掖掎掀掫捶掣掏掉掟掵捫	9E70	柝柢柮枹柎柆柧檜栞框栩桀桍栲桎
9D80	<b>捩掾揩揀揆揣揉插揶揄搖搴搆搓搦搶</b>	9E80	梳栫桙档桷桿梟梏梭梔條梛梃檮梹桴
9D90	攝搗搨搏摧摰摶摎攪撕撓撥撩撈撼據	9E90	梵梠梺椏槝桾楟棊椈棘椢椦棡椌棍棔
9DAØ	擒擅擇撻擘擂擱擧舉擠擡抬擣擯攬擶	9EAØ	棧棕椶椒椄棗棣椥棹棠棯椨椪椚椣椡
9DBØ	<b>擴擲擺攀擽攘攜攅攤攣攫攴攵攷收攸</b>	9EBØ	棆楹楷楜楸楫楔楾楮椹楴椽楙椰楡楞
9DCØ	<b>畋效敖敕敍敘敞敝敲數斂斃變斛斟斫</b>	9ECØ	楝榁楪榲榮槐榿槁槓榾槎寨槊槝榻槃
9DDØ	斷旃旆旁旄旌旒旛旙无旡旱杲吴昃旻	9EDØ	榧樮榑榠榜榕榴槞槨樂樛槿權槹槲槧
9DEØ	杳昵昶昴昜晏晄晉晁唏書晤晧農晟哲	9EEØ	摐櫰樞槭樔槫樊樒櫁樣樓橄樌橲樶橸
9DFØ	晰暃暈暎暉暄暘暝曁濹曉暾暼	9EFØ	橇橢橙橦橈樸樢檐檍檠檄檢檣

PA-6610 USER'S MANUAL

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9F40	檗糵檻櫃櫂檸檳檬櫞櫑櫟檪櫚榳櫻欅	E040	漾漓滷澆潺滑澁澀潯濳濳潭澂潼潘澎
9F50	糵櫺欒欖鬱欟欸欷盜欹飮歇歃歉歐歙	E050	澑濂遼澳澣澡澤澹濆澪濟濕濬濔濘濱
9F60	歔歛歟歡歸歹歿殀殄殃殍殘殕殞殤殪	E060	濮濛瀉瀋濺瀑瀁瀏濾鸁瀚潴瀝瀘瀟瀰
9F70	殫殯殲殱殳殷殼毆毋毓毟毬毫毳毯	E070	瀾瀲灑灣炙炒炯烱炬炸炳炮烟烋烝
9F80	<b>磨</b> 氈氓气氛氤氣汞汕汢汪沂沍沚沁沛	E080	烙焉烽焜焙煥熙熙煦煢煌煖煬熏燻熄
9F90	汾汨汳沒沐泄泱泓沽泗泅泝沮沱沾沺	E090	熕熨熬燗熹熾燒燉燔燎燠燬燧燵燼燹
9FA0	泛泯泙泪洟衍洶洫浛洸洙洵洳洒洌浣	EØAØ	燿爍爐爛爨爭爬爰爲爻爼爿牀牆牋牘
9FB0	涓浤浚浹浙涎涕濤涅淹渕渊涵淇淦涸	E0B0	牴牾犂犁犇犒犖犢犧犹犲狃狆狄狎狒
9FCØ	淆淬淞淌淨淒淅淺淙淤淕淪淮渭湮渮	E0C0	狢狠狡狹狷倏猗猊猜猖猝猴猯猩猥猾
9FDØ	渙湲湟渾渣湫渫湶湍渟湃渺湎渤滿渝	EØDØ	獎獏默獗獪獨獰獸獵獻獺珈玳珎玻珀
9FEØ	游溂溪溘滉溷滓溽溯滄溲滔滕濾薄滂	EØEØ	珥珮珞璢琅瑯琥珸琲琺瑕琿瑟瑙瑁瑜
9FFØ	溟潁漑灌滬滸滾漿滲漱滯漲滌	EØFØ	瑩瑰瑣瑪瑶瑾璋璞璧瓊瓏瓔珱
	0123456789ABCDEF		0123456789ABCDEF

E140	瓠瓣瓧瓩瓮瓲瓰瓱瓸瓷甄甃甅甌甎甍	E240	磧磚磽磴礇礒礑礙礬礫祀祠祗祟祚祕
E150	甕甓嘗甦甬甼畄畍畊畉畛畆畚畩畤畧	E250	祓祺祿禊禝禧齋禪禮讓禹禺秉秕秧秬
E160	畫畭畸當疆疇畴疊疉疂疔疚疝疥疣痂	E260	秡秣稈稍稘稙稠稟禀稱稻稾稷穃穗穉
E170	疳痃疵疽疸疼疱痍痊痒痙痣痞痾痿	E270	穡穢穩龝穰穹穽窈窗窕窘筈窩竈窰
E180	痼瘁痰痺痲痳瘋瘍瘉瘟瘧瘠瘡瘢瘤瘴	E280	窶竅竄窿邃竇竊竍竏竕竓站竚竝竡竢
E190	瘰瘻癇癈癆癜癘癡癢癨癩癪癧廯癰癲	E290	竦竭竰笂笏笊笆笳笘笙笞笵笨笶筐筐
E1A0	<b>癶癸發皀皃皈皋皎皖皓皙皚皰皴皸皹</b>	E2A0	笄筍笋筌筅筵筥筴筧筰筱筬筮箝箘箟
E1B0	皺盂盍盖盒攡盡盥盧盪蘯盻眈眇眄眩	E2BØ	<b>抢</b> 绝 箚 箋 箒 箏 爭 箙 箧 篁 篌 篏 箴 篆 篝 篩
E1C0	眤眞眥眦眛眷眸睇睚睨睫睛脾睿睾睹	E2C0	簔簔篦篥籠簀簇簓篳篷簗簍篶簀簧簪
E1DØ	瞎瞋瞑瞠瞞瞰瞶瞹瞿瞼瞽瞻矇矍矗矚	E2DØ	籆簷簫簽籌籃籔籏籀籐籘籟籖籖籥籬
E1E1	矜矣矮矼砌砒礦砠礪硅碎硴碆硼碚碌	E2E2	<u>料</u> 粃粐粵粭粢粫粡粨粳粲粱粮粹粽糀
E1F0	碣碵碪碯磑磆磋磔碾碼磅磊礊	E2FØ	糅糂糘糒糜糢驖糥糲糴糶糺紆
	0123456789ABCDEF		0123456789ABCDEF

	0120400703AUCDL1		01204007004000
E340	衬紜紕紊絅絋紮紲紿紵絆絳絖絎絲絨	E440	隋腆脾腓腑胼腱腮腥腦腴膃膈膊膀膐
E350	絮絏絣經綉絛綏絽綛綺綮綣綵緇綽綫	E450	膠膕膤膣腟膓膩膰膵膾膸膽臀臂膺臉
E360	總網綯緜綸綟綰緘緝緤緞緻緲緡縅縊	E460	臍臑臙臘臈臚臟臠臧臺臻臾舁春舅與
E370	縣縡縒縱縟縉縋縢繆繦糜縵縹繃艛	E470	舊舍舐舖舩舫舸舳艀艙艘艝艚艟艤
E380	<b>縲縺繧繝繖</b> 繞繙繚 <b>襗繪</b> 繩繼繻纃緕繽	E480	艢艨艪艫舮艱艷艸艾芍芒芫芟芻芬苡
E390	<b>辮繿纈纉續纒纐纓纔纖纎纛纜缸缺</b> 罅	E490	苣苟苒苴苳苺莓范苻苹苞茆苜茉苙茵
E3A0	罌靃罎罐网罕罔罘罟罠罨罩槑罸羂羆	E4A0	茴茗茲茱荀茹荐荅茯茫茗茘莅莚莪莟
E3BØ	羃韅羇羌羔羞羝羚羣羯羲羹羮羶臝譱	E4BØ	莢莖莫莎莇莊荼莵荳荵莠莉莨菴萱菫
E3CØ	翅翆翊翕翔翡翦翩翳翹飜耆耄耋耒耘	E4CØ	菎菽萃菘蘘菁菷莨菠菲萍萢萠莽萸蓤
E3DØ	耙耜耡耨耿耻聊聆聒聘聚聟聢聨聳聲	E4DØ	菻葭萪萼蕚蒄葷葫蒭葮蒂葩葆萬葯葹
E3E3	聰聶聹聽聿肄肆肅肛肓肚肭冐肬胛胥	E4E4	萵蓊葢蒹蒿蒟蓙蓍蒻蓚蓐蓁蓆蓖蒡蔡
E3FØ	胙胝冑胚胖脉胯胱脛脩脣脯腋	E4FØ	<b>蓿蓴蔗蔘蔬蔟蔕蔔蓼蕀蕣蘳</b> 藌

Page:3-52

PA-6610 USER'S MANUAL

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E540	蕁橤歮獪瘟薤薈夁魝薨蕭檣薛數癓薜
E550	蕷蕾薐藉薺 <b>藏</b> 薹藐藕藝橤藜藹蘊蘓蘋
E560	藾藺蘆蘢蘚蘰蘿虍乕虔號虧虱蚓蚣蚩
E570	蚪蚋 <b>蚌魽蚯</b> 蛄蛆蚰蛉蠾蚫蛔蛞蛩蛬
E580	蛟蛛蛯蜒蜆蜈蜀蜃蛻蜑蜉蜍蛹蜊蜴蜿
E590	蜷蜻蜥蜩蜚蝠蝟蝸蝌蝎媩蝗蝨蝮蝙蝓
E5AØ	蝣蝪蠅螢螟螂螯蟋馫蟀蟐雖螫蟄螳蟇
E5BØ	<b>蟆</b> 螻蟯蟲蟠蠏蠍蟾蟶蟷蠎蟒蠑鱯轜籱
E5CØ	蠡肅蠶蠹蠧蠻衄衂衒衙衞衢衫袁衾袞
E5DØ	衵衽袵衲袂袗袒袮袙袢袍袤袅袿袱裃
E5E5	<b>裄裔裘裙裝裹褂裼</b> 裴裨裲褄褌褊褓襞
E5FØ	褞褥褪禠襁襄褻褶褸襌褝襠襞

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E640 襦襤襭襪襯襴襷襾覃覈覊覓覘覡覩覦 E650 覬覯覲覺覽覿觀觚觜觝觧觴觸訃訖訐 E660 訂訛訝訥訶詁詛詒詆譽詼詭詬詢誅誂 E670 誄誨誡誑誥誦誚誣諄諍諂諚諌諳諧 E680 諤諱謔諠譂飁諞諛謌謇謚諡謖謐謗謠 E690 謳鞫韾謪謾謨譁譌譏譎證譛譛譚譫譟 E6A0 譬譯譴譽讀讌儺讒讓讖讙讚谺豁谿豈 E680 豌豎豐豕豢豬豸豺貂貉貅貊貍貎貔豼 E6C0 貘戝貭貟貽貲貳貮貶賈賁賤賣賚賽賺 E6DØ **賻贄贅贊贇驘膽贐齎贓賍贔贖**赮赭赱 E6E6 赳趁趙跂趾趺跏跚跖跌跛跋跪登跟跣 E6F0 跼踈踉跿踝踞踐踟蹂踵踰踴蹊

	0123456789ABCDEF		0123456789ABCDEF
E740	蹇蹉蹌蹐蹈蹙蹤蹠踪蹣蹕蹶蹲蹼躁躇	E840	錙錢錚錣錺錵錻鍜鍠鍼鍮鍖鎰鎬鎭鎔
E750	<b>躅躄躋</b> 躊躓躑躔躙躪躡躬躰軆躱躾軅	E850	鎹螷鏗鏨鏥鏘鏃鏝鏐鏈鏤鐚鐔鐓鐃鐇
E760	皫軋軛燛軼軻軫軾輊輅輕輒輙輓輜輟	E860	鐐鐶鎷鐵鐡鐺鑁鑋鑄鑛桬鑢鑞纑鈩鑰
E770	輛輀鼄輳輻輹轅轂輾轌轉轆轎轗轜	E870	罐鑷鑽鑚鑼鑾钁鑿閂閇閊閔閖閘閙
E780	轢轣轤辜辟辣辭辯辷迚迥迢迪迯邇迴	E880	閠曽閧閭閼閻闀閾闊濶闃闍闌闕闔闖
E790	逅迹迺逑逕逡逍逞逖逋逧逶逵逹迸遏	E890	關闡闥闢阡阨阮阯陂陌陏陋陷陜陞陝
E7AØ	遐遑遒逎遉逾遖遘遞遨遯遶隨遲邂遽	E8A0	陟陦陲陬隍隘隕隗險隧隱隲隰隴隶隸
E7BØ	邁邀邊邊邏邨邯邱邵郢郤扈郛鄂鄒鄙	E8BØ	隹雎雋雉雍襍雜霍雕雹霄霆霈霓霎霑
E7CØ	鄲鄰酊酖酘酣酥酩酳酲醋醉醂醢醫醯	E8C0	非霖霙霤霔霰霹霙霾靄靆龘靂靉靜靠
E7DØ	醪醵醴醺饢釁釉釋釐釖釟釡釛釼釵釶	E8DØ	靤靦靨勒靫靱靹鞅靼鞁靺鞆鞋鞏鞐鞜
E7E7	鈞釿鈔鈬鈕鈑鉞鉗鉅鉉鉤鉈銕鈿鉋鉐	E8E8	鞨鞦鞣鞳鞴韃韆韈韋韜韭齏韲竟韶韵
E7FØ	銜銖銓銛鉚鋏銹銷鋩錏鋺鍄錮	E8FØ	頏頌頸頥頡頷頺顆顏顋顫顯顰

	U123456789ABCDEF		0123456789ABCDEF
E940	顱顴顳颪颯颱颶飄飅飊飩飫餃餉餒餔	EA40	鵝鵞鵤鵑鵐鵙鵲鶉鶇鶫鵯鵺鶚鶤驁鶲
E950	餘餡餝餞餤餠餬鯬餽餾饂饉饅饐饋饑	EA50	鷄鷁鶻鶸鶺鷆鷏鵨騺鷓鷸鷦鵗鷯鷪鸚
E960	饒饌饕馗馘馥馭馮馼駟駛駝駘駌駭駮	EA60	鸛鸞鹵鹹鹽麁璺麋麌麒麕麌麝麥麩麸
E970	駱駲駻駸騁騏騅騈攍鶱騷鰸贂驀謤	EA70	<b>麫麭廱</b> 嚳黎黏黐黔黜點黝黠黥黨黯
E980	騾驞驍驛驗驟髗驥讓矔龘驪骭骰骼髀	EA80	黴壓黷褍黻黼黽鼇鼈皷鼜鼡鼬鼾齍齒
E990	髏觸髓體髞髟髢髣髦髯髫髮髴髱髷髻	EA90	影詢龃龆齡龈齧龉齪齷齲齶竉龜龠堯
E9AØ	鬆矍鬚鬟鬢鬣鬥鬧閧鬩鬪鬬鬯鬲魄魃	EAAØ	<b>减</b> 涤瑤
E9BØ	魏魍魎魑魔魴鮓鮃鮑鮖鮗鮟鮠鮨鮴鯀	EABØ	Is store -
E9CØ	鯊鮹鯆鯏鯑鯒鯣鶃鯤鯔鯡鰺鯲鯱鯰鰕	EACØ	
E9D0	<b>鰔鰉鰓鰌鰆鰈鰒鯟鰄鰮鰛鰥鰤鰡鰰</b> 鱇	FADØ	
E9E9	鰲鱆鰾鱚鱠鱧鱃鱸鳧鳬鳰鴉鴈鳫鴃熓	EAEA	
E9FØ	鴪鴦鶯鴣鴟鵄鴕鴒鵁鴿鴾鵆鵈	EAFØ	

PA-6610 USER'S MANUAL

Page:3-53

# 3-3-1-3. Traditional Chinese Language Codes

	A140 A150 A160 A170 A180	0123456789ABCDEF , 、 ; ; ? ! : ; : ? !   -   -   -
	A190 A1A0 A1B0 A1C0 A1D0 A1E0 A1F0	$\begin{array}{c} 0 & 0 & \cdots & \cdots & \vdots \\ & & & & & & & \\ & & & & & \\ & & & &$
DP ◎ 山 狸 番	A340 A350 A360 A370	Ο123456789ABCDEF wxyzABΓΔΕΖΗΘΙΚΛΜ ΝΞΟΠΡΣΤΓΦΧΨΩαβγδ εζηθικλμyξοπρστυ φχφωσ\$Π⊏Σ±3%%5Γ

A240 A250 A260 A270 A280	0123456789ABCDEE \/\\$辛〒¢£%@℃°F\$%@mil mmcmkmKMm <sup>2</sup> mgkgcc <sup>°</sup> 兙兛克勉范兣溜 瓩糎 Ⅰ Ⅰ Ⅰ Ⅱ Ⅱ ■ + + 1 Ⅰ □ └ ∠	A340 A350 A360 A370 A380	0123456789ABCDEF wxyzABΓΔΕΖΗΘΙΚΛΜ ΝΞΟΠΡΣΤΓΦΧΨΩαβγδ εζηθικλμγξοπρστυ φχψωσ\$Π⊏5555%
A290 A2A0 A2B0 A2C0 A2D0 A2D0 A2E0 A2F0	(二日) 123456789IIIIIVVIVI WIIXXIIIIX8→=主文十冊冊A BCDEFGHIJKLMNOPQ RSTUVWXYZabcdefg hijklmnopqrstuv	A390 A3A0 A3B0 A3C0 A3C0 A3D0 A3E0 A3E0	
A440 A450 A460 A470 A480	0123456789ABCDEF 一乙丁七乃九了二人儿人八几刀刁力 七十卜又三下丈上丫丸凡久么也乞于 亡兀刃勺千叉口土土夕大女子孑孓寸 小尢尸山川工己已已巾干升弋弓才	A540 A550 A560 A570 A580	0123456789ABCDEF 世丕且丘主乍乏乎以付仔仕他仗代令 仙切充兄冉冊冬凹出凸刊加功包刻北 匝仟半卉卡占卯卮去可古右召叮叩叨 叼司回叫另只史叱台句叭叻四囚外
A490 A4A0 A4B0 A4C0 A4D0 A4E0 A4E0	扭丐不中丰丹之尹予云井互五亢仁 什仃仆仇仍今介仄元允內六兮公冗凶 分切刈匀勾勿化匹午升卅卞厄友及反 壬天夫太夭孔少尤尺屯巴幻廿弔引心 戈戶手扎支文斗斤方日曰月木欠止歹 毋比毛氏水火爪父爻片牙牛犬王丙	A590 A5A0 A5B0 A5C0 A5D0 A5E0 A5E0	央失奴奶孕它尼巨巧左市布平幼弁 弘弗必以打扔扒扑斥旦术本未末札正 母民氐永汁汀氾犯玄玉瓜瓦甘生用甩 田由甲申疋白皮皿目矛矢石示禾穴立 丞丟乒乓乩亙交亦亥仿伉伙伊伕伍伐 休伏仲件任仰仳份企伋光兇兆先全

Page:3-54

PA-6610 USER'S MANUAL

A640 A650 A660 A670 A680 A690 A660 A660 A660 A660 A660 A660	0123456789ABCDEF 共再冰列刑划刎刑劣闼匡匠印危吉吏 同吊吐吁时各向名合吃后吃吒因回团 圳地在圭圬印迁夙多夷夸妄奸妃好她 如妁字存字守宅安寺尖屹卅帆并年 式弛忙忖戎戌戌成扣肛托收早旨旬 旭曲曳有朽朴朱朵次此死氛汝汗汙江 池汐汕污汛氿汎灰牟牝百竹米糸缶羊 羽老考而耒耳聿肉肋肌臣自至臼舌舛 舟艮色又虫血行衣西汗串亨位住佇花	A740 A750 A760 A770 A780 A780 A780 A780 A700 A700 A70	0123456789ABCDEF 作你伯低伶余佝佈佚兌克免兵冶冷別 判利刪刨劫助努劬匣即卵吝吭吞吾否 呎吧呆呃吳呈呂君吩告吹吻吸吮吵呐 吠吼呀吱含吟听囪困囤囫坊坑址坍 均坎圾坐坏折壯夾妝妒妨姐她妙妖 妍妤妓妊妥孝孜孚李完末宏尬局屁尿 尾岐岑岔岌巫希序底床廷弄弟彤形彷 役忘忌志忍忱快忸忪戒我抄抗抖技扶 抉扭把扼找批扳抒扯折扮投抓抑拉改
A6F0	佞伴佛何估佐佑伽何伸佃佔似但佣	A7FØ	攻攸旱更束李杏材村杜杖杞杉杆杠
A840 A850 A860 A870 A880	0123456789ABCDFF 构宗步每求汞沙沁沈沉沅沛汪决沐汰 冲旧冲设汽沃汲汾汴沆汶江西河北沂壮 灼炎炎牢牡牠狄狂玖甬甫男甸皂盯矣 私秀秃究系罕肖肩肝肘肛肚育良芒	A940 A950 A960 A970 A980	0123456789ABCDEE 咖亞古咀呻甲咄咒咆呼咐呱姆和咚呢 周咋命咎固垃坷坪坩坡坦坤坼夜奉奇 奈奄奔妾妻委妹妮姑姆姐姗始姓姊妯 姊姒姓孟孤李宗定官宜亩宛尚屈居
A890 A8A0 A8B0 A8C0 A8D0 A8E0 A8F0	芋芍見角言谷豆豕貝赤走足身車辛 辰迂逃迅迄巡邑邢邪邦那西釆里防阮 阱阪院並乖乳事些亞享京佯依侍佳使 佬供例來侃佰併侈佩佻侖佾侏侑佺兔 兒兕兩具其典冽函刻券刷刺到刮制刷 劾劻卒協卓卑卦卷卸卹取叔受味呵	A990 A9A0 A9B0 A9C0 A9D0 A9D0 A9E0 A9F0	屆岷岡岸岩岫岱岳帘帚帖帕帛帑幸 庚店府底庖延弦弧弩往征彿彼忝忠忽 念忿怏怔怯怵怖怪怕怡性怩怫怛或戕 房戾所承拉拌拄抿拂抹拒招披拓拔抛 拈平抽柙拐拙拇拍抵拚抱拘拖拗拆抬 拎放斧於旺昔易昌昆昂明昀昏听昊
AA40 AA50 AA60 AA70 AA80	0123456789ABCDEF 昇服朋抗訪枕東果查把枇枝林杯杰板 杠松析杵枚科杼杪杲欣武歧歿氓氛泣 注泳沱泌泥河沽沾沼波沫法泓沸泄油 沉沮泗泅泱沿治泡泛泊沫泯泜泖冷	AB40 AB50 AB60 AB70 AB80	0123456789ABCDEF 陂隹雨青非亟亭亮信侵侯便俠俑倘保 促侣俘俟俊俗侮俐俄係俚俎俞侷兗冒 冑冠剎剃閒前刺剋則勇勉勃勁匍南卻 厚叛咬哀咨哎哉咸咦咳哇哂咽咪品
AA90 AAA0 AAB0 AAC0 AAD0 AAE0 AAF0	炕炎炒炊炙爬爭爸版牧物狀狎狙狗 狐玩旺玟玫玥甽疝疙疚的盂盲直知砂 社祀祁秉和空穹竺糾罔羌芈者肺肥肢 肱股肫扇肴肪肯臥臾舍芳芝芙芭芽芟 芹花芬芥芯芸芣芰芾芷虎虱初表軋迎 返近邵邸邸邸米金長門阜陀阿阻附	AB90 ABA0 ABB0 ABC0 ABD0 ABE0 ABF0	哄哈咯咫咱咻咩咧!們囿垂型!很垣垢 城垮垓奕契奏奎奐姜姘姿姣姨娃姥姪 姚姦威姻孩宣宦室客宥封屎屛屍屋峙 峒巷帝帥帟幽庠度建弈弭彥很待徊律 徇後徉怒思怠急怎怨恍恰恨恢恆悖恬 恫恪恤扁拜挖按拼拭持拮拽指拱拷

PA-6610 USER'S MANUAL

Page:3-55

AC40 AC50 AC60 AC90 AC90 AC90 AC80 AC80 AC80 AC80 AC80 AC80 AC80 AC8	0123456789ABCDEP 扬括拾拴排挂政故斫施既春昭映味是 星咋昱吟曷柿染柱柔某柬架枯栅枢柯 柄相拐柏查枸柏柞柳砰柙柢拆柒歪殃 殆段毒毗氟泉洋洲洪流津洌洱洞洗 活洽派洵洛泵洹洧洸洩洮洵洎洫炫 為炳炬炯炭炸炮炤爰牲牯牴狩狠狡玷 珊玻玲珍珀玳甚甭畏界吠畋疫疤疥疢 疣癸皆皇皈盈盆盃盅省盹相眉看盾盼 眇矜砂研砌砍祆祉祈祇禹禺科秒秋穿 突竿竽将紂紅紀紉紇約紆缸美羿耄	AD40 AD50 AD60 AD70 AD80 AD90 AD80 AD80 ADC0 ADC0 ADC0 ADC0 ADF0	O123456789ABCDEF 耐要需耶啡旁胚胃胃清胡肿胎胞肌胀 致灿苧范茅苣苛苦茄若茂茉角苗英茁 苜苔苑苞苓苟苯茆慮虹虹池衍衫要動 計訂計貞負赴起趴軍軌述迦迢迪迥 送迫遮迨郊狼防郃酋酊重閂限陋陌 降面革韋非音頁風飛食首香乘毫倌倍 倣俯倦悾俸倩倖倆值借倚倒們俺倀倔 倨俱倡個候倘俳修倭倪俾倫倉兼冤冥 冢凍凌准凋剖剜剔剛剝匪卿原厝嬰哨 唐唁喻亭哥哲唆哺唔哩哭員咴琌哪
AE40 AE50 AE60 AE70 AE80 AE90 AE80 AE80 AE00 AEF0	0123456789ABCDEF 喇唧層哽唏圖圍埂埔裡埃猗夏套裝奚 娑城娜姆娘娓姬娠娣姊姊她裡媽孫屘宰 害家宴宮菏容宸射腐展屐峭峽峻岭峨 峰島崁峴差席師庫庭座弱徒徑徐恙 恣恥恐恕恭恩息悄悟悚悍悔悌悅悖 扇拳挈拿捎挾振捕捂捆捏捉挺损挽挪 挫挨捍掤效枚料旁旅時晉晏晃晒响晅 晁書朔朕朗校核案框桓根桂枯树梳架 桌桑栽柴桐桀格桃株拖栓移桁殊殉股 氣氧氣氦氯泰浪涕淌涇浦浸海浙局	AF40 AF50 AF60 AF70 AF80 AF90 AF80 AF80 AF80 AF80 AF80 AF80	0123456789ABCDEE 浬涉浮浚浴浩涌湿浹涅湿涔洋烘烤洛 烈鳥爹特狼狹狽狸狷兹班琉珮珠玮洛 畔軟畜畚留疾病症疲珀疽疼疹痂疸晕 炮益盍盐眩真眠眨矩砰砧砸砝破砷 砥砭砠砟砲秘袺祠祟祖神祝祗祚秤 秣秧租秦秩秘窄窈站笆笑粉紡於泣紊 素素純紐紙級紜納紙紛缺評盖翅翁耆 耘耕肥耗饥耽恍脂胰豬胭胴脆胸胳脈 能脅胼胯臭臬舀舐航舫舨般獨茫荒荔 荊茸荐草茵茴荏茲茹茶茗荀茱茨荃
B040 B050 B060 B070 B080 B090 B080 B000 B000 B000 B000	0123456789ABCDEF 虔软蚪树蚤畫蜱松蚜衰衷袁袂衽衹記 許討訂訕訊託訓訖計訑豈豺豹財貢起 躬軒軔軋辱送逆迷退迺迴逃追逅迸邕 郡称郢酒配酌釘針釗釜針閃院陣徒 階換除彈陸隻飢馬骨高鬥鬲鬼乾偺 偽停假偃偌做偉健偶偎皆偵側偷偏倏 惊偭兜冕凰剪副勒務動動電훤匙琶區 屬參曼商啪啦亟啞啡廚啊門炎問陶唯 唧唸售嗳唬聊爽啁哘圈國聲啦堅望地	B140 B150 B160 B170 B180 B190 B180 B100 B1C0 B100 B120	0123456789ABCDEF 娼婢婚婆婊孰寇寅寄寂宿密尉專將屠 屜屝崇崆崎崛崖崢崑崩崔籥崎崧崗巢 常帶帳帷康庸庶庵庾張強彗林采海得 徒從徘御徠倘恿患悉悠您惋悴惦悽 情倖悵惜悼惘惕惆惟悸惚淳戚戛扈 掠控捲掖探接捷捧掘措捱掩掉掃掛捫 推淪授爭採掬排掏掀捻捩捨捺敝敖救 教敗啟敏敘敕敕給斛斬族旋旌施畫晚 晤晨暉啼曹勗望渠粉桃梓だ准桶栖捂

B240 B250 B260 B270 B280 B290 B280 B280 B200 B200 B2F0	0123456789ABCDEF 毫毬氫涎涼淳淙液淡淌淤添淺漬淇淋 涯淑澜松淹涸混淵淅淒渚涵淚淫淘淪 深准淨猗淄涪淬涿淦烹焉焊烽烯爽牽 犁猜猛猖猓猙率琅琊球理現利瓠瓶 瓷甜產略畦畢異疏痔痕庇痊痍咬盔 盒盛眷眾眼眶眸眺硫冰硎祥票祭移窒 窕笠笨笛第苻笙笞窄粒粗粕絆絃統紫 紹紼絀細腳郫組累終鏈絨缽羞怜翌閉習 耜聊聆脯脖屬脫倚脰賑舂舵絃舳船莎 莞莘荸荚莖莽莫莒莊莓莉莠荷荻荼	B340 B350 B360 B370 B380 B380 B380 B380 B380 B380 B380 B38	0123456789ABCDEF 前員處尾紅柱封拍枯蚵蛆蛋炸蚯於術袞 架被袒袖袍滾覓規訪訝決訥許設訟訛 訪豉豚販責買貨貪貧祿赦拉趺軛軟這 逍通逗連速逝豕逕逞造透逢逖逛途 部導循陷裡發釵釦釣釧缸釠閉陪陵陳 陸陰陴陶陷佩雀雪雩章竟頂頂魚鳥鹵 鹿麥麻傢傍傳備傑愧傖傘傚最凱割剴 創種勞勝動博飲音喀喧啼嵶喝喘喂喜 喪喝劇幣南當單喝唾約喚喻喬喱啾喉 喫隊圍亮堪場堤堰報堡堝堠壹壺奠
B440 B450 B460 B470 B480 B490 B480 B480 B460 B4F0 B4F0	0123456789ABCDEF 婷媚嫣媒媛媧孳孱寒富寓寐尊尋就旅 嵐嬴嵇巽鷤蕌暫幀障幾廊廁厢廏弼彭復 循徨惑惡悲悶惠愜愣惺偔憍惻惴慨惱 愎惶偷揪揭戟扉擊掌描揀揩揉探揍 插揣提握損揭揮極援揪換崩揚掯敞 敦敢散斑斐斯普晰嘖晶景暑狎晾晷曾 替期朝棺棕棠棘棗椅楝棵森棧棹棒棲 棣棋棍植椒椎棉棚棺菜款欺欽殘殖殼 毯氮氯氳港游湎渡渲湧湊渠渥渣减湛 湘渤湖湮潤渦湯渴潏湍渺測湃渝渾滋	B540 B550 B560 B580 B580 B580 B580 B580 B580 B580 B58	0123456789ABCDEF 溉换湎澛湄湲湩湟焙焚焦焰無然煮焜 牌犄犀狼猥猴猩琺琪琳琢琥琵琶琴琯 穿琦琨甥甦畫番痢痛痣率痘痞痠登發 皖皓皴盜睏短硝硬硯稍稈桯梲稀窘 窗窖童竣等策筆筐筒答荀筋筏筑粟 粥絞結減絕紫絮絲絡給緧經鋒善翔翕 蓋聒肅翑腔腋腑腎脹腆脾腌탥腴舒舜 菩萃菸萍液首萋菁華菱菴著灰弧萌菌 菽菲菊萸萎萄菜萇菔菟虛蛟赳轻蛔蛛 蛤蛐酰舌街裁裂袱罩視註詠評詞証詁
B640 B650 B660 B680 B690 B690 B660 B600 B600 B600 B600 B60	<b>0123456789ABCDEF</b> 記語許認訴診詞該象貂貯貼貳貽賁費 賀貴買貶貿貸越超趁铊距跋跚跑跌跛 路軻軸軼辜逮達週逸進逶鄂郵鄉國雅 酥量鈔鈕鈣鈉釣純鈐鈇鈑閔閨開閑 間閒鄒隊階簡陽關邊煌翊場雁雅雄 集雇雯雲韌項順須飧飦飯種欲筋馮馭 黃黍黑亂傭債慠傳僅傾催傷傻傯僇剿 剷闑募勦動勢勣匯嗟嗨廢嚓嗎嗜嗇嗑 嗣闡闅鳴窮꼦倉噑嗉園圓塞塑塘塗塚 ど疽闅淵隐鬼鍋吃塢腦勞奧嫁姊她黃媽媼	8740 8750 8760 8770 8780 8790 8780 8780 8700 8700 870	0123456789ABCDEF 總嫂媲嵩嵯幌幹廉廈弒彙徬微愚意慈 感想愛惹愁愈慎慌慄慍愾愴愧愍愆愷 戡戝搓搾搞搪搭落搬博搜搔損搶搖搗 搆敬斟新暗暉暇暈暖喧場喝會榔業 楚楷楠楔極椰概楊棺椢楞楓榲榆楝 楣楛缼嵗毀殿鯍键溢溯滓浴滂源溝滇 滅薄溘壅溺溫滑準溜滄滔溪凓臭煎煙 頂煤煉照煜婸煦煌煥煞煆뿺爱爺牒猷 獅猿猾瑯瑚毘瑟瑞瑁瑘邎玽奟當畸瘀

B840 B850 B860 B870 B880 B880 B890	0123456789ABCDEF 唐對時期時期能接碎碰碗碘碌碼硼碑 確控淇祿禁萬禽稜稚稠稔稟稞窟窠筷 節筠莖莧粱梗粵經編翅桃綏絛置單罪 署義羨許聖聘肆肆腱動剔攝思腳腫	B940 B950 B960 B970 B980 B990	0123456789ABCDEE
<u>B8A0</u>	腹腺腦舅艇蒂葷落萱葵蕈葫葉葬葛	B9A0	飽飾悲怯默馴髡鳴麂鼎鼓鼠僧僮傍僖
B8B0	萼萵葡蓮葩葭葆虞虜號蛹蜒娯蜇蜀蛾	B9B0	倃僚僕像僑僱僎僩殑凳劃뷇匱厭嫉嘀
B8C0	蛻锋蜃螅种衙裟裔裙補裘裝裡鼻裕哀	B9C0	嘛嘗嗽嘔嘆嘉喇嘎嫐嗩榔漕墬嗶團圖
B8D0	覜解詫該詳試訪詰誇訪詣誠話誅詭詢	B9D0	塵墊境墓墊塹墅塽壽夥夢夤奪奩嫡嫦
B8E0	詮詬詹詻訾詨豢貊貉賊資賈賄貲賃賂	B9E0	嫩媼縹씷騗孵覓寧寡寥實寨寢揊察對
B8F0	賅跡跟跨路跳跺詭跤絑躲較載軚輊	B9F0	屢嶄嶇嶂幣莃幗慢廓廖弊彆彰徹覐
BA40	0123456789ABCDEF	BB40	0123456789ABCDEE
BA50	愿悲慷慢慣慟慚慘慵截撇摘摔撤損摟	BB50	罰翠翡翟聞聚肇腐膀膏膈膊腿猕減臺
BA60	摺摑摧搴摭摻敧斡旗旑暢暨暝榜榨榕	BB60	與舔舞艋蓉蒿蓆蓄蒙蒞蒲蒜蓋蒸蓀蓓
BA70	稿榮槓構榛榷榻榫榴槐槍榭槌榦槃榣	BB70	蒐蒼蓑藙碗蜜蜻锰蜥蜴驗鮑捲調裳褂
BA80	歉歌氳漳演滾漓滴漉漾淇漬漏漂漢	BB80	裴裏裸製裨褚裯誦誌語誣認減誓誤
BA90 BAA0 BAB0 BAC0 BAD0 BAE0 BAF0	滿滯漆漱漸漲湮漕浸潔敵狗滬漁滲 滌瘃熔熙煽劇熄受爾搞举獄獐窑瑣瑪 瑰璤甄疑瘧瘍瘋痛瘓盡監瞄睽睿胆磁 碟碧碳暊碣禎福禍種稱窪窩竭端管箕 箋莚萛箝萡箏箸笝箄稡粽精錠綰綜綽 綾綠緊錣網綱綺錭綿꼶綸維緒錙綬	BB90 BBA0 BBB0 BBC0 BBD0 BBE0 BBF0	說詰調誘訊討補豪狸貌賓賑除赫趙 捏局輔輒輕乾辣遠遘遜遣遙遞遽遐遛 鄙肅圍彈類麵語絞交銀銅絡絲絡銓銜笯 鉼銃閡閨閩閣閥阁隊鄣榮雌維需靼鞅 諂頗領與風颱餃紺稚餉駁骯骰髦魁魂鳴 鳶鳳麼鼻弯億儀僻僵價儂儈儉儅凜
BC40	0123456789ABCDEF	BD40	0123456789ABCDEF
BC50	劇劈劉劍會腿蘭勞團潦劑團獨陣處噎	BD50	瑾璀畿痨璿瘟廍喥瘡ົົ爾皚皺盤語謎購
BC60	噗噴师嘯機墀處增填堅撞墩播或喜開	BD60	暝順磋磅確磊碾磕碼磐稿稼穀稽稷稻
BC70	嬋數驗齋燒寮寬審寫層履嶝銳幢儲播廢	BD70	窯窮箭箱範箴篆篇篁菙葔糊締練緯緻
BC80	廚爾廝廣廠彈影德徵愛慧慮愿慕憂	BD80	鍼緬緝編緣線缎缓遲萍缈緹罵羅羯
BC90 BCA0 BCB0 BCC0 BCD0 BCE0 BCF0	憠慰送慾憧憐憫懀傠幝憤潐憮戮擘 摰摹撞對勞撐撰撥撓腯潦撒撮播撫撚 撬轉憛撳敵敷數晷暫暴暱樣瘴槨樁樞 標傮模樓樊蠑樂傱磩樑歐歎殤毅毆漿 潼澄潑潦煣澆潭潛潰潮惉潺潰潤澗潘 滕潯潠潟熟熬熱熨牖犛獎獗瑩墇璃	BD90 BDA0 BDB0 BDC0 BDD0 BDE0 BDF0	翝耦膛膜猕膠膚膘蔗蔽蔚蓮蔬蔭蔓 蔑痔蔡蔔篷葱宿淩螂蝴蝶融換為蟲塩 蟑蝌蝓衛衝褐複褒褓淪褊誼諒淡諄誕 請諸課諉諂調淮論諍辞誹觊豌豎豬賠 賞賦郥艱賬賭賢賣賜質賡赭趟趣翅邊踝 踢踏踩踟倦踞餉輝輛輟輩輦輪輜輞

BE40	0123456789ABCDEF	BF40	0123456789ABCDEF
BE50	駐適進遊遭選鄰鄭鄧潘阿靜海蘭範幹梯	BF50	濃澤濁濃澳激澹澶澦澠澴坳孰焫燒燈
BE60	銷鋪考鉫鋁銳建鋒銀雖旱問閱實霆震	BF60	燕喜熫燙熌撚鍅獨瑞璣」」「強騙」「「」。
BE70	霉靠較鞋鞏請頗領颳養飢稅贫餘吃駐馴	BF70	瘴腐膈」「藍甜型開標曾磨酒聲噴、黑積穎
BE80	駛罵駕駒駙骷髮髯鬧勉魂就魯鴆鴉	BF80	穆稣膠窺賞簑築篤篛篡篩篦糕穂縊
BE90 BEA0 BEB0 BEC0 BED0 BEE0 BEF0	鳨麩麾黎墨齒儒儲儔價儕冀羃凝劑 鼼圑婨噫噹謳噤噸噪꼶嘌壉噯噬嘎 壁墾壇壅奮퉳嬴學寰導彊憲憑憩憊燣 憶憾慡懈戰擅擁擋撻澸壉擄罯擂操檢 擒擔撾整曆曉暹뻩曇蟟樽撲樺镫横橘 樹橄憜緣憍橇撨牋橈鈂歷氅濉澱澡	BF90 BFA0 BFD0 BFD0 BFE0 BFF0	鎌葉縛縣鎬謓縉錫摧義翰翱樹桐/ 膩腔柔則般痕詃蔥 蕈蕨蕩落兒肅蕪蕞 螃螟螞쭙融像運褲 褥褫 窩親龍帝諺諒 諱詫諜詰諮詰調調諭諳湛援豫貑貓 賴疏渡踴踩踹朣輻輯柿褲奏辨辦遵遴選 遲遼遺鄴醒錠錶鋸錳錯錢綱錫錄錚
C040	0123456789ABCDEF	C140	0123456789ABCDEF
C050	維綿綺銀翅絕間逐漸險難要落霖霍覽	C150	旗腔為磷磺硫酸礁 德澤穗蓬該美險蓬
C060	霏靛靜観聯麼到時意更就便餐館錢餛	C160	統除棟葉蓮棋槽積參縮績線製煤編縫
C070	絕餚該餅駱胲駱髻髭鬨飽吃鴣薄鸭瘍	C170	總從巢繁縴黑強緩緩減音勢翼聲聲聽
C080	鴛默黔龍龜優償儡儲蘭Խ豪嚀噹滯嚇	C180	聯聳臆腳應臂勞膿膽臉膾臨舉艱薪
C090 C0A0 C0B0 C0C0 C0D0 C0E0 C0E0	嚔塐壓壑鋫軁嬰嬪瘶풂尷屨嶼嶺嶽嵰 髾痡徽應僃悡霝懋戱戴擎擊孹擠凈嶈 擬擱擢瓁鉠蚐읭灈嚺憻檔燩檢懀櫛懎椟 糪槍檠猒殥毚魹凈濆곍湪춣夀襤忂歰 濬濡獲濕偞維篴營夑翝喿鐗釼嬒輿爵 牆獰獲璩環瑷璨癆療癌盪鱩覴眑瞬	C190 C1A0 C1B0 C1C0 C1D0 C1E0 C1F0	薄镭緈 <u>薑語著辞</u> 薇薨薊虛迚孧障螳蟒 蟆螫螻뿷國怒亵褶襄凄褽覞謎謗謙請 謊謠諊腯搐謐箹谿錮賺賨購膹暷趨蹉跼 蹈粱轄輾轂蜫輿避遽還遇避邀翱額暫 酡貌鎂錨鏈鍊鍥鍋鍾鍾鉜殾锾鍚鍔闗 闋闎劏闆隱慧鏈錐霮霞翰韓戰興颶餵騁
C240	0123456789ABCDEF	C340	0123456789ABCDEF
C250	駿鮮鮫鮪鮭鴻鴿糜黏點點魪黛鼾齋護	C350	料硅額顏題顎顓颺餾餿鸱餮顏騎髁鬃
C260	嚕嚮壙壘嬸彞蔤擑擴擲獶搑羅擞擷斷	C360	鬆魏輕超鯊鯉鯽鯈絲鳪隝鵠黠鼕鼬儳
C270	曜朦犢懞櫃檻懧櫂懤懛빬歸殯瀉瀋濾	C370	嚥壞壟儮竆竆廬盧懲懷犐懵攀擳僴鵦櫥
C280	瀆濺襮劉ຼ嫐燼燾燸獷湚籃璿甕廦庽	C380	櫝憪擼灜瀟羬╸瀝瀕瀘爆樂牘瀆獸
C290 C2A0 C2B0 C2C0 C2D0 C2E0 C2E0	癒瞽瞿曕瞼礎禮穡懅穠窤竅騺簧簪 簞箿簡糧縋溢続繚繡熷緢曋螁捌尡聶 臍臏舊藏薩菙藍鋴藉薰薺薹薦嬈幝蟲嬏 覆皩鵢謨蓪謬滳豐贅蹙蹣蹦瞛蹪蹕軀 轉撤郔邃邈醫醬釐鎔縍鎖鎢鰁顊謞鎰 鎘鎚鍧閶闖闐闕離雜雙雛雞霤鞣湫	C390 C3A0 C3B0 C3C0 C3D0 C3E0 C3E0	櫴璽瓊瓣疇圕癟寎懞屔溸檴檼簾薄 簸薟簷籀繫甋燡繩繪羅繳羶羹驘膱藩 藝軙穂掺椠譇鼄蠅蠍蠗蟾襠襟澳襞諽 諳睵諠譂譎譏畗譙璔贊蹼竴躇颬鐙獟 蹴鞯轖蹐邊遡纐膲鏡蹢鏲舫๋建镗鏝鏧 镖縲鏘鏤鏗鏨퉮濪難霔霧靡轁諿頖

C440 C450 C460 C470 C480 C490 C480 C420 C420 C420 C420 C420	0123456789ABCDEF 願顛戰變饉蓬點鬍鯨鯧猜鯛鶉乱島鵫 鵬龍麗薩變動喻裏嬰臉附現潮薄孽寶 處懸懺讓攔攪剝脆懶獵獮瀲爐獻追癢 滾礦礪攀礫會競籌籃籍結糰猕繽繼 纂羃櫂臚藍藻藹 礕鬝蘆蘋蕀藴壞뿖 徭覺觸議譬警譯誹譫龐隨臺踴腳踢躂體 釋鐘絕嘯闡覈飄饒饑馨騫膖騷騳廰思鍬 罅婟薰浥齟魳鹷儷 觶嚊囀囂夑屬巍懼 懾攝攜瀷曩櫻欄倔強瀖爛犧琅瓔糋詭	C540 C550 C560 C570 C580 C590 C580 C580 C520 C520	0123456789ABCDEP 護譽贓講躍躋轟葤臐鐮擂鐵講澤獨鐫 關節譯蕗響順顆響驅驃鮺緊號應魑 鰥鶯鴭鷂鶲麝點擊杫齦齧儼儚蠈囊囉 攣巔巒彎訖攤榷龡灑溝邏瓢疊癮癬 不能續聾聽臟葉 税脫讀賣賣贗淵蹭響 龐篩籟聾聽臟葉 税脫讀賣賣贗淵蹭響 龐篩籟聾聽臟葉 税脫讀賣賣贗淵 響戶 腳請鑑鑒薺壅韃韁顫鼚鐈馬駱攢鬚數 經過鵙鶥驅竈韶鯤龔 嚇巖戀擊賽覺覺灑擺 瓚竊籖籣 續纓纖纔 攢蘸蘿曐愛選邏 緩緩靨顧 饜驚緊影的體罰絕綽鍼斷續斷 影響影響
C640 C650 C660 C670 C680 C690 C680 C680 C660 C600 C600 C600 C660	推測整調解樂爾無非端。通確電機械能見通 の123456789ABCDEP 識體前着離這整靈調穩著號變擬燈鷹驚 檢體蓄靜輻輻瞭覺繪能證聲現晶變讓論 顧機寬繁變線屬讚錯靜態感覺驚驚驚驚 續整羅運動調音整調易點體著簡驚篇 新志いいううええおおか がきぎくぐけげこごさざしじすずせ ぜそぞただちぢっつづてでとどなに ぬねのはばばひびびふぶぶへべべほ ぼぼまみむめもゃやゆゆよよらりる れろわわゐゑをんアアィイッウェ	C740 C750 C760 C770 C780 C790 C780 C780 C760 C700 C700 C7E0 C7E0	
C840 C850 C860 C870 C880 C890 C880 C880 C800 C800 C800 C80	0123456789ABCDEF	C940 C950 C960 C970 C980 C990 C980 C980 C960 C960 C960 C960 C960 C960	0123456789ABCDEF 又包凸厂方丌毛亍囗兀中彳丏有与 轧亓仂仉仉冘勾叩杂比劲决少市先受 册气月丱丼仨仜仩仡全命刊匜册玎圣 夗夯宁宄尒尻劳屳帄庀庂忉戉扐氕 示汃氿氻太犰玊内肊劝伎优保仵侃 仱伀价伈枟伂伅伢伓伄仴伒冱元怎册 荔匢匟卍厊吇囡匈圮岂巧夼边奼虹數 如虾抱孖尕尥師叱屻屾巟幵庄异章汋 快ź扦扦扦抓也扦挖扙汉扚扥旯旮朾 执朸相机束杜机氘汆疗汜达汊汐汋
CA40 CA50 CA60 CA70 CA80	0123456789ABCDEF 汕切功形达订角癿空网种节方艽方声 西邙形形环邔印加地税吃屉徑但法体低 任伟侠佟佁佘泫他们临阳泼刜刞剧劭 劫匉卣卲底厚吰咉吡呔呅吙吜吥吘	CB40 CB50 CB60 CB70 CB80	0123456789ABCDEF 杙杕机杈杝杼挖机毒氙氚汸汧汫沄洗 泡沃汯汩沚沟流沕沜汦汳汥汻沎灯地 牣狋犽狃狆狁犺狂玕于玓玔町叮号疔 疕阜礽耴肕肙肐肒肜苄芏芅芎芑芋
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CA90 CAA0 CAB0 CAC0 CAD0 CAE0 CAF0	中中吗哈哈哈普固隔周抵持坌地份望 拿买转运纳势纷纷效效远近完笔尨尪 师阮J\${\$\\\$	CB90 CBA0 CBE0 CBC0 CBD0 CBE0 CBE0	芊芃芄豸迉辿邟邡邥邞玩扮斑地心止 防弗侘佼侅饮册挗信洱洿侄很优侷佪 侚佹侁佸恤舟侔如侒倌侕佫佮冞冼冾 刵韭刳剆舠劼匊匋疍厒厔吵吵却甘吁咂 咈咕呺呾鸣鸣鸣吻和印尼如布厚电吟 囷熨丕坲坭坫坱坰揭圩坵坻坳坴坢
CC40 CC50 CC60 CC70 CC80	0123456789ABCDEF 定持麦荷过转相快起射频就她延短裙 如軟和於發展孢孥密宕层扁伦院柜站还 相呼快向岭岢岪岧岝岐帕坳岦恢被帙 引势消低条组冷征态気似怦怙怲怋	CD40 CD50 CD60 CD70 CD80	0123456789ABCDEF 濕济渗沊林桥泞河泡添泇沼湿泏泩泑 烘炉炅料纹烛林炖炝吹菜料狖汤城还 钻狒泥狚狌泠玮牙玭玦玢玢坍玝瓝瓦 甿畀甾疌疘皯盳盱盱吃矸矼矶矻矺
CC90 CCA0 CCB0 CCC0 CCD0 CCE0 CCE0	惯招佔柷怚怞怬怢作拘蚴數伴怌抱 怜菚戽抗抴拑抾抪抶拊抮抳抯抻抩胦 抸敓肵斻咗旼贩昒昈妟昃稥昍昅吨吟 盼曶朊枅杬枎枒杶杻枘枆构杴枍枌杺 枟枑枙枃抙极杸杹枔吹殀歾毞氝圕泬 泫洋泙沶泔沭泧泼泐狪沺泃泆泭泲	CD90 CDA0 CDB0 CDC0 CDD0 CDE0 CDE0	行祂約托罗罕勞料紅耵肏肮肣肸折     的的艾克芫荽芘芛其芋肉芼芎芙芴芨     芡芩艾芤芨芶芢虰虯切虮豕远廷迓速     达迕达邓阿邯环陷陷邓却即低两俍俅徑     偏倍俋俁俔俜俙侻侳俛俇俖侺馁侹俬     剄剉兢勂圆卼痒厖厙厘咺咺叩咕咥哏
CE40 CE50 CE60 CE70 CE80	0123456789ABCDEF 响着喇叭彩甲语匈哆 量 告 局 等 球 毗 毕 咱 该宅 羊 至 柯 地 地 比 建 铁 计 聿 光 拾 去 垕 壹 复 奓 如 志 担 更 城 寿 妹 姚 龙 뉎 多 洽 标 波 前 病 妍 始 煽 妳 拴 裂 發 死 屌 岐 回 经 地 炮 词	CF40 CF50 CF60 CF70 CF80	0123456789ABCDEF 柜枻轻柘披枷梶佛祖柟枵挾枳柷柶拙 柣柂枹柎柧柰泉柼拉栊祠枯袒柛柺抸 柊柃柪柋欨驵殄殶虙毘毣氠氡洨洴洭 洟洼洿洒洊泚洳洄洙洺洚洑洀洝浂
CE90 CEA0 CEB0 CEC0 CED0 CEE0 CEF0	峞峚客峇峊峖峓地陑峈峆峎峟峸巹 帡恰帣帠帤庰庤庢庛庣庥弇弮彖徆恋 您恔恲恞恅恓恇恉恛恌恀侚恟怤恄恘 恦恮扂扃拏挍挋拵挎挃拫拹挏挌拸桚 挀侘挔揀挕拻拰敁敃斪斿昶昡咈昵昜 昦昢昳昫昺昝昴昹昮胐胊柁栤柈枺	CF90 CFA0 CFB0 CFC0 CFD0 CFE0 CFE0	洁洘湮洃洏浀洇洠洬洈洢洉洐炷炟 炾炱炰炡炴炵炩胢牉招牬牰栂牮狊狤 狨狫狟狪狦狣玆垃迈珈珅玹玶钳玴珫 玿珇玾珃珆玸珋瓬瓮甮呁畈疷疷癹盄 眈眃眄眅眊盷昑盺矧饫砆砑秕旀砐砏 斺砉砃砓祊衶祋祆祄秕种秏秹粉窀

D040 D050 D060 D070 D080 D090	0123456789ABCDEF 突站空空籺积妆村秋杆圳轨纹罘羑幸 狙着耎而紆音眩拂胠职肢胂朏肤胣胙 胜朐胕脂肺胗胦胍臿舡芔苙芯苸茇苨 茀苕茺苫苗苴苬苡苲旲茌苻苶苰苪	D140 D150 D160 D170 D180 D190	0123456789ABCDEF 映即等欧告唎商除信图提型指导单角 查徑記律序角层排吟装美塑起效信妹 拢翅想要州孬宦窘戒專军的哺峿裙峱 宰崀峹峭锐摩庮庪庬弳消彧恝恚恧
DØAØ DØBØ DØCØ DØDØ DØEØ DØFØ	苤苠苺苳菇件+{{2}約 這割起建退在這部却得碱預料% 了。 起此刻角爾等哆珠惊怪碗後使後俱 後傳係倬椒們們個催保試松侶,供完尋 溝清,凄固凈,金刻劇問句殼則刻訪電 所 吵, 成. 四時, 明, 吃, 雪明, 哈尼吗, 雪明,	D1A0 D1B0 D1C0 D1D0 D1E0 D1F0	恁悢阑悀悒焆悝悃悕鋑憸悇悜悟戙 扆拲挐捖挬捄涌挶捃揤挹捋捊娞捝告 掏捘捔捙挭捇涇捚捑垷步捀捈敊敆旆 旃旄旂咥晟咵晑朒脁拼栚校栲栳ব桋 枊拪栱楝栵栫栭栯挃挄栫栝栒栔栦栨 栮桍栺栥栠貁欯欭欱欴歭肂殈毦毤
D240 D250 D260 D270 D280 D280	0123456789ABCDEF 基毣把越氟沖浣浤洋油浡港浘浢澳浯 凍浡淯浿涆浞涅浠沧利兔池涂疾泉深 涋浾涀涄淠涠浻浽形涐烜烓垗烝烋缹 烢该烒烞烠姛烍烅烆烇烚烎烡牂牸	D340 D350 D360 D370 D380 D390	0123456789ABCDEF 并往逐笏笈氘笎笉笒粄耙垛粌粈粍物 紞紝紑紎纮紖魣紟紒紏述呈罡罞罠置 罵羖羒を掤狲种秒耾耹胺胲胹胵脁胻旁 异种肥茳茨荄茙黄堇荖芄荁束茜药
D290 D2A0 D2B0 D2C0 D2D0 D2E0 D2F0	全拳紗這狴犰狶狳狻猁咬珙珥疣玼 珧珣珩珜珒珛珔翊珚珗珘珨瓞瓟瓴瓿 甡畛畟厓店亰痄痀疿疶疺岒盉眝昧眐 眓胂眣眑眕眙眚眢昭砣砬砢碎碌砨硻 砫珏砩砳砪砱祔袪袥沽祾沼泆秫秬秠 栝桞秪秜秞秝窆窉窅窋窌窊窇竘笐	D350 D3A0 D3B0 D3C0 D3D0 D3E0 D3F0	荂荎茛茪茈筒荍茖芗茠伎茯茩荇苔 荌荓茞茬荋茧荈虓虒蚅块蚖地披蚞蚇 蚗蚆蚋蚚蚅蚁蚙纷蚧蚕蚘蚎蚝屿蚔吥 衄衭衵神衲袀衱衿衯榖衾衴祾訒肛豗 豻貤責赶赳趵趷趶軑軓迾迵适迿迻逄 這迶郖郠郙郚浡郟郥郘郛郗浩浴呀
D440 D450 D460 D470 D480	0123456789ABCDEF 暫地到3執狹珍率訂影管乳楔偪偡楪 僂喔饼閒偲偈提偁偛偊偢僅偅偟偩待 偣偤偆偀偮偳渻碸凐剫剭剬剮勖勓匭 重咖定的驴驴淬涛率	D540 D550 D560 D570 D580	0123456789ABCDEF
D4A0 D4B0 D4C0 D4D0 D4E0 D4F0	噓呒児舍牾唹ュ噑味啡抑濕圊圖峍享探捲 執埜塇堀球埽綱場圳指色诞堇坎垺琫埥 堜亞唛琦堐埧果堌叔爭採兔兒実婠捲 婕婧執執與城处课烟妈遅霎奶奶洗炭没 焙婛姨數者娾婍始娘城姨妹岸深矮添婦緊孲 孮寁宷屙崞崋崝崚崠幆啑嵱崦崥崏	D540 D580 D500 D500 D560 D560 D560	捸掅掁掑掍捰敓旍呝庯晛喥晜晢脧 桹梇梐疢桭桮梮梫揤娨梣梬梩桵桴梲 梏柛誝桼桫桲梪栜弳桾梛梖梮柖梉僗 桸锋梑梌梊桽欶欳欷欸殑殏涥殎殌氪 淀涫淗涳湴涬蓤淢涷淶淔渀淈淠淟淖 湝湪淜淝淛淴淊涽滹淰涺淕淂淏淉

D640 D650 D660 D670 D680 D690 D680 D660 D660 D660 D660 D660	<b>0123456789ABCDEF</b> 温滤滂茫淗濾況捨娘練完塌學嫂浮煮 加语涿那场焓焓海堤奘ら焎悟栳響浩 穿猗猇混削況猈延猏捨旅珶珸珵琄旋 斑琇琀珺琪珿琌琋琪『驴寻富痎痒病	D740 D750 D760 D770 D780 D790 D780 D760 D700 D760 D760 D760	0123456789ABCDEF 物样和距伸脚院映球腔型语序腔独挺散接 防制胡柯柏伊作冷静沉淀浸沫污营营 抹技达苦着这位学发着完坚是我花装 站花浸重莰成首历男巧基虑。库坡坦 蚊站出出神曲快销低虾弧蚴靠的两坯 或伤花沉泫洋祛祓褶衲洗淹狗袍祗诊 袤寬裏祖拗墅觖觙指訰后之头祛流研 犯豽貥甚些趋趼肢跌级肥种神毛軝种段 虹輪边通速通道逡巡妻即时栉来防恐硬啊 都滑熠边般奶禽酥秆針針。您约全缘执針
D840 D850 D860 D870 D880 D890 D880 D880 D80 D80 D850 D850	0123456789ABCDEF 封赴封扶鬥鬥漸高崩漸漸倫權靪頂低 爐傛傕傔傞傋傣傃傌傎傝傑愮傒傶借 扰滄匒匑厤厧咱喨噢驴。唧嚕咼圌堩谙 喵喁喣噌喤啽罧琵啿呵줻鄣咼圌堩谙 「塑堞煗堣堨埵塈堥埬堛堳瓬境鬥堹 珮堭堬堻奡媯媔殜婺媢媫婸财菥媥媬 媕媮娷美媊媗款舂媩腩賐趤媜揣煌媝 寪寍寋寔濅寊寎尌尰嶂阓嬧郒嵋崿崵 嵑嵎嵕崳崺嵒崽崱嵙嵂鰰亭崸崼崲髥 嵀葴幄頋彘徦徥徫惉悹瘎惢惎愁愔	D940 D950 D960 D970 D980 D990 D980 D960 D960 D960 D960	0123456789ABCDEF ()
DA40 DA50 DA60 DA70 DA80 DA90 DA40 DA60 DAC0 DAC0 DAC0	0123456789ABCDEF 溟湜溝渱渨湠濤湫渹煈淪湓涋渧壳漉 渚湕湹渞湦渵葓湚烀浡焯埏焮焱焣뗬 焢焲焟熶焺焛腃掌捲揨犆罁犋馱猋猰 猢猱徦獨獨猭猦猣猵猌琮琬琰琫琖 琚椒玲瓓琤琣琝琩唺啡瓻甯畯畲痧 痵痡痦瘎商痤癁皕峨畵院娣睄睍睅锔 諦難晚离矬硠硤硥聲硭硱硪确硰硩唓 路碱派浸祰稅稊稃梌稄窙竦浤筊笻 兆筈筌筎達筘筅穼袖粕粫影效該針針試	DB40 DB50 DB60 DB70 DB80 DB90 DB80 DB00 DBC0 DBD0 DB22	0123456789ABCDEF 寧城澳羨翊耶師聐蔵肉腃腊脲擬腇脏 腍脺臦臰臷臸鍼舃舼錄舿絶茻菏菹萣 菇菨茪菧菤菼藆萐菆菈蕇菣莿其菝菥 菘菿菡菋菎菖菵筿萉萏菞萑箄菂菳 淪菺菇髷菪萱菃菬菮菄枺菗抱萛菛 菾蝆蚛姨越蛤咧蛪蛝峗蛜蛬蛩量蚆蛑 衈斯術袺裗袹袸裀祩袶袼袷踟袲褁裉 础覘覗鰄蛌觛詎詍訹該詀詷韷詄詅紿 詈詑詫詌詏豟貁貀骩貾歵貹貵趄墊趉

DC40 DC50 DC60 DC70 DC80	0123456789ABCDEF 軟視映動射紙幹軶軫軱畲鞋抬這連遠 鄆為壓调節努界關節部領部卻和範疇計 許阿訪記款新壯太對缺絕級新紙公針 抗就訪組該統钥紛跌閉閉電關處 嗯	DD40 DD50 DD60 DD70 DD80	0123456789ABCDEE 姛嫊嫊媴媶嫍熘鞓寖寊寙尟尳嵱嵣嵊 嶑嘄嵬嵞嵨崰嵢巰幏幎幊轁幋廅廌廆 乶廇毂豀傜憃癗慊愫憣愶愲愮慆愯熐 愩慀戠酨猐揵戱揅摰揫揥济痽搠搤
DC90 DCA0 DCB0 DCC0 DCD0 DCE0 DCF0	陓隃隀雂萑雃雱霗靬靴靮頇颩鉃纪	DD90 DDA0 DDB0 DDC0 DDD0 DDE0 DDF0	
DE40 DE50 DE60 DE70 DE80	0123456789ABCDEF	DF40 DF50 DF60 DF70 DF80	0123456789ABCDEF 捆倫容說這理笑官等茨筩筼筥廷衍作 筡簞筶筣粲柙粯綈綆竦鋍球浸締挺統 約緣谿谷緣浣船浮戰爭罧罹戮浣羥踆翛 翜耡脂藈扁腜腩腛睭肌隈膝膝脫睮腯
DE90 DEA0 DEB0 DEC0 DED0 DEE0 DEF0	煄煍焸牏犍腵犑犐犎猼獂狶猺獀獊 獉喧喊瑋瑒瑑瑷瑀瑏斾瑎堳瑆瑍瑔瓡 瓿瓺窟렖碗啜榃捾痦溕淹痾痼痹痸庚 痻痶痭痵痽晳皵盠睕睟稭盵攱皷鴡銟昏 睮睙晭矠芘碂碔碏碄쥽碅碆碡碃旕碙 碀碖硻淉徟祽裪稑稘稙稒稧犉稢稓	DF90 DFA0 DFB0 DFC0 DFD0 DFE0 DFF0	腄鵬搴艉鵤艄膋艂餘蓱萿葖葶葹蒏蒍 葥苷萿蒆苭埬葍葽甚袙葴薂葝蔇葞葪 萺萴葺葃戅爰葅萩菙胊萯葂萭葟箯萹 葎蔱耘竕蒎蒎萻葇萶萳嵔葾葄萫葠葔 葮葐螕霢蟍愸蛺蛖蛵蝍娋鳎鋢葂蛶蜍 蟰裖裋裍凗裞藵裚湙磆覅赐觟兟觤
E040 E050 E060 E070 E080	0123456789ABCDEF 格着智绪她訓証註訊起詞說表說多評 結結供登豐發豤處貆津貅資祉絕达這 基起逐述趔趄地跰跠硅等碎趾洩跌跢 拴跲跫跴核軿拱輀輅辁輈董輋遒遏	E140 E150 E160 E170 E180	0123456789ABCDEF 漸劑則動動單層嘧哆嘌啡專其粉發驗園 即催嗚呼劇會硬庸博」望乾帶夏婁崩珍麼 均商墎鹿缥即東堆望近奫璋烤媽戀膠 嫚哧娘婆嫢發發熫煽她說疑婚琴裏
E090 E0A0 E0B0 E0C0 E0D0 E0E0 E0F0	遄遉迄畜與隔隔靜崩為ツ息物酯指定柱 鉤在近河站截統紀鉛佔但自由共夠纵 給絆甸銀麵法石計丝鉤环紋弧閣問閉 閛聊兼空問鬼堆零零 霄寒斬列服幹預頻 肩腿愈急廝馬形。與骭肋加鳥鳴鳧塵黽 僦僔僗僨傈僛僪僝僤僋僬僰贷僣僠	E190 E1A0 E1B0 E1C0 E1C0 E1E0 E1F0	寣ি同©鸣嘟嘈嵺嶑碇蓷嶉嶈嵾嵼槢 蓪漬樍慔廖鹿童廗頋瘏隓廙滶婁彊蹕 彯徶憩愨慁慞專慳慒慓慲僅熮慴慔僂 慛慥愻慪慡慖戩戧戫搫摍挠蹗摴摶嘶 膒摽戚瓠撦摎觢摞摜緞摓摠傱摿秮摬 摫蹥摥摷敳黇瞈暠暟朅媡朢榱榶槉

E240 E250 E260 E270 E280	0123456789ABCDEF 榠搓榖榰榬掹榑榕榎榧榒榩愦榯榿稻 榽傑槔榹桇榚搛椀榓榪榡搙槙榗榐槂 榵榥槆歊鴥歑殞殟殠毃毄毾莍滵滱漃 漥滸漷滻漮漉潎漙膒亁層漻強縪漊	E340 E350 E360 E370 E380	0123456789ABCDEF 港律禒禐楅穊裙椶揙椲窨窫斎竮菭箜 菸萐箐菻箍鈰荕箎箅箘刉膫箤箂粻棵 粼稗綧綷敥淃錹湕謱緅綝緎緄鶍绯錗 綯跲綖檕蜧蜝繴綩綡蜽乶뮄鼝翥翞
E290 E2A0 E2B0 E2C0 E2D0 E2E0 E2E0 E2F0	漶瘏虖滤漭潀漰漄漵滫漇漎潃漅滽 滶渪漜滼漺漟漍漞縩漡熇熐熉熀熅熂 熏煻熆熁熗牄牓犗犕搊釱篞猘獌瑢瑳 瑱瑵瑋塐瑮甊瓹甃畽疐瘏瘈翶棙瘑瘊 痦輱巺睼瞅板睮瞀睯睾瞃碲碪碴啺碨 壐碫碞碥碠碬碢碤褅褉禋禖禕褆禓	E390 E3A0 E3B0 E3C0 E3D0 E3E0 E3F0	耤碱腔膉膆膃膇膍膫膋舕裉蒤髣蒟 蒺蓎텣蒬蒮蒫蕥莂蓁蓍尃蒚痡鱆蒝蒧 茢蒤荶滒蓌蒛蒩剻偦箆孧蒶蓏息蓗蓔 蓒蓛妏蒑虡鹎羦蜨蝫啝蟍聛盘蜙蜛腏 蜬蝁蟍肀蜠婑鋾衉魽鋋蛻᠈翶粣旇椧蜧 蜸蜤蟗彏蜑裷裧裱裲裺裾裮裼裶裻
E440 E450 E460 E470 E480	0123456789ABCDEF 接後補規規規制時極漸漸認認時這些認識的 治統發則則時建脫間這時認知的政 這邊起些些結構動給拿配感哪變煩變 場單個相望的酸結於新創話詞結算	E540 E550 E560 E570 E580	0123456789ABCDEF 噚戰衝唧嘬唧ພ嘪嘺圕뉄境燈環墣塗 墜撞着竱癗嫴婝嫷嫶鼝嫸躆늻燈嬇婶 嬏쪦轟嘮嶟嶒竴蕃և鳸噾嶜嶡銢穧憤憚 幠順瘰疐廞鳸彉徲憗憃慹憱憰憢憉
E490 E4A0 E4B0 E4C0 E4D0 E4E0 E4F0	組建地色彩結合如碱湿針膜病病式建结 紅菇自存等等光率抹丢針补化管防原常范护排 基种型机器并相撞地被約度未取用起她乱贫 间插延起馬馬馬德瓜瑪 覃坎阶隽 整她见鱼毛 約魚工得P島限處這僅 [ 偽 偿 儆 儇 僶 僾 儋 傲 毬 使喿圓 閫 廁 加執 噂 噌 噌 喝 嗯 喻 啊 臀 噘	E590 E5A0 E5B0 E5C0 E5D0 E5E0 E5F0	憛憓憯憭憟憒憪憡憍慦憳戭摮摰撖 僌擨撗撜潯朙閒撌撣撟摨撱笞敶敺敹 敻斲鈩驴弾砲幦鄣暷暔嗼樀樆摴挡槸樕 槱摙慲撞槬槢熮摍槾樧槲襂櫣楘槧廅 樈槦摫樍槼槫摤樄憆樥樏醎樦檹槴樖 歑殥殣殢殦氁氀毵氂潁藔凚澬濆澒
E640 E650 E660 E670 E680	0123456789ABCDEF	E740 E750 E760 E770 E780	0123456789ABCDEF
E690 E6A0 E6B0 E6C0 E6D0 E6E0 E6E0	獢璇璉璊璆瘛暰璅墽瑼瑹甈甇畾瘥 蓫螷瘝瘜瘣瘚瘨瘛嵪郃皡扂瞍瞏瞉睮 磰碻磏磌暟嗘磼磈磃磄磉禚馮禠禜禢 稘歶槙窲寊寙葹篋箾硩쨘箯箹葓箵糅 糑糌糋緷緛緪緧緗緍繢紭愳倾鋘緰鍑 媑閯翍羰羭幡詬翪蝁蠞翨朜隉隓畻	E790 E7A0 E7B0 E7C0 E7C0 E7D0 E7E0 E7E0	蝖蝣掉帥融為處握對感種感感的靜 影響場時以後發發語。 短端溶準福碟被冷得得得後後衰衰決思想 現時前前就服其弦淺家訳說語言。 話林深記語答思求腔與閒實資訊影達 物推定院習音符容に建於音出如始認

E840 E850 E860 E870 E880	<b>0123456789ABCDEF</b> 環球調維酸認論转精接建 增期期期基礎 遭趣達越部增导增單期質額的對析 酶加能宏說 短短結素 結果時代給益完約 結果時代給益完約 結果時代給益完約 結果時代給益完約 結果時代給益完約 結果時代給益完約 結果時代給益完約 結果時代約益完約 結果時代約益完約 結果時代約益完約 結果時代約益完約 	E940 E950 E960 E970 E980	0123456789ABCDEF 嗪碱哪勢會喻就圖>於城球準與壁擊 學壇嫱環愛姚號檢登感聽樂撞需國。 嶩學睜聯檢業密點辞最懇憐慘時腳廩 廧廦廨層預微憝慾愁懅憴懆懁懌憺
E890 E8A0 E8B0 E8C0 E8D0 E8E0 E8F0	銵鋡銞銴镼閬閫閮郮嘳隢雓霅霈霂 靚鞊報粘鉿韏頞頝豥萴湏搷頠頛餇颲餈 飺馞餔餖鋉戧巍砃暫丐鵶鴡峋嶀绐龆 駗駌骳髬髱髳髲髱貤嬔颃巟弡竗納竕 魰趀魤魬鳼鳺鳽鳿鳷摀孮鴀鳹澙鴈鴅噅 麃黓鼏痡儜懛儗儚儑煭躗叡瑡遃噮	E990 E9A0 E9B0 E9C0 E9D0 E9E0 E9F0	憿憸憌溮擖撔梑擉墽挐燶擛擳擙攳 敿敼殸唓蠞噋嘾曏爳雺罼塣朣樴橦 橉橧樲橨樾憛橭傤嶥橑楃橚樻樿橁撚 蒅蕠橏憞铹橩橠樼憓橖懚橍橎橆歕歘 歖殧潱暺腶毇葃軞僐渀澾橁褍粿歕歘 湁邈澽澞濊澨颌শ縎徻澺澬濖涊凚澸
EA40 EA50 EA60 EA70 EA80	0123456789ABCDEF 澢濉湛.葱漆漆、金發環環燈層/單葉焦緒 臺灣南歐地環境發現積發現積積濃層激 檢滑堅琦璠增培時通顧觀影原感重瘳 摸察流環驗意时時明期觀俗智速時與	EB40 EB50 EB60 EB70 EB80	0123456789ABCDEF 棘旗蕤萼貨随閒單菇黎糖結蒿慧蕵蓪 復蕠薌漬薃蕔雜舔諕虛號虛些動地發 塘地對愷壘以斷想鳴戶與塊較賺豎態螉 溫維裹喪榮緊察寝緊溶瀰藻涓觱諠
EA90 EAA0 EAB0 EAC0 EAD0 EAE0 EAF0	鴡磝碱磥蓶釄磣磛剮磢噣霳磠漝棎 穈毶窶蒾鳸窱斾篞勞蒮蘳篕篞篚蒢籉 篔萀篢篜篫簻蔳犕襎搝榑搦苤縡忥迹 媷縠縓繢縜縕鞱攭缒繴縖浖縔縤盠菪 罻罼罺獂翯耢耩聬牏墛甝貭腟膫旙膬 肔膲腳朣臲笧蓵艗楶渪蕫蕍銴蕡荛	EB90 EBA0 EBB0 EBC0 EBD0 EBE0 EBF0	諢裡課城南湾滤萼記認重贏盜品誯諯 諻貑貒鈽咁資挭聛瘏城純娘對些超春品退 蹃迼毘踢馮跼勐鈗鍬瘛軜軯甤輵輲摴輷賄 遶遹遻遵簻畖婐尦邷楍輣商問お兺錞錈 餤猜鈍赺畚朱奈錼錣錒猓椚歸鈶鈌鹎鋋錝 鋺錥毵毵퇷鎁瘗輘鈘其鋿鈶昌荮釕싆螑錔錌
EC40 EC50 EC60 EC70 EC80	0123456789ABCDEF 釧鋾錉錀鋻錖閼闍閾閹閺閶閿閶閿匾 鴡寠霒霮輎鞗鞔韰韸腽頯與餘餟餧餩 馞駮駬號甕勁駣跣駩駧瞉滑牏鮬髶鬐 髹髷鬳鮀鮅綀魼魾釽鮂鈼鮒鈶銄鮕	ED40 ED50 ED60 ED70 ED80	0123456789ABCDEF 緊環議道儒橿慓檚檅檌績歛殭疑酵衆 潦爾澣濜濭濧濦濞瀫凑漤懲燡燱燨燲 烸燰燢獳狦獯璗哮璫蹡喿璭瑟曔璯甐 甑絚甏噒麚殘癉癇皤盩暽暺硺瞷瞶
EC90 ECA0 ECB0 ECC0 ECD0 ECE0 ECF0	魽鮈땄鴗鴠鴞鴔鴙鴗牑鴢鴐鴙鴡麏 麆穈麮麭黕黖黺薡釚儦愩儢晜儠儩勴 噋嚌嚍廍喓瓋噾嚂翆鼅帇夀髶荎娳嬥 嬲嬣孀勴蘬嬯嬮孻寱寲疑諵蠓徾徻盭 覐憼懧懠懠懥懤焩懞撌譳夀擫撌擨斁斀 斶旚曒镱檖檫轙熞撌樋燡橮甛檓檎	ED90 EDA0 EDB0 EDC0 EDD0 EDE0 EDF0	瞴瞱퇰歎曾磳硗礂磮磼磲磝磹磾礄禫 禨橦穛檨徺橫穚窾竀竁潌蘣蔧篢篿篻 簎蓫簋蕇簂簉袳徤篸溮藗篰蓠蔌簊糨 綯綻繂夀錷茣鄿繉繀옯縩鎫貀繴紮緊 縺罅罿罾罽揯輲捸膻臄뛠媣臅臇膼臩 艛轖艜薃薀薃薧薕嫧薋鼔蔝薤薚薞

EE40	0123456789ABCDEF	EF40	<b>0123456789ABCDEF</b>
EE50	预建義靖龍連路港通蒙都知營薁韓敖	EF50	弊¥峭椁銀鏡定面頂顊顉扇联頁表餌做植類島
EE60	營媽豬蒙達接簽於幼園啟地糖糟麵標	EF60	餲餯餭鋃餰葥或馣馡野鴉腐或瑪瑪瑪馬
EE70	螼帶膠慢鳴總重螯蟄蟊雷螶醬盜螽盤	EF70	貼防鴉系象便對髽索看鑿地鎮吉點斷而小網剛
EE80	螲高褳濯漂強榆稅後現觀覺輝縠高	EF80	絡裂誤紫軟範給強克動見貼為酮以為精為
EE90 EEA0 EEB0 EEC0 EED0 EEE0 EEF0	謘謖滨諊滸喪諛詯減謇營謈謆謜謓 謚豏糓豲豱豯貕錵壏枾瞋躎溜踦蹌蹇 轃醖邅遾鄸蚀魀齨隉懙醟酢뚹緧繿鎡痲鄊 絈鍖辪鋮鋓銟鰓鍉鍐鍑鍏銊錃鍙鐜鍹 鍗鍕鉥鍏鍱鍷鉆鍡鍞鋽擖鶮緂紨銺闇闀 闉闃闅鎁隮隰陠枩葓霘霝珽辁鞡禙	EF90 EFA0 EFB0 EFC0 EFD0 EFE0 EFF0	鵅鵂鵃鵫鴽鵀鴽翵隖麊藲麍麰黈黚 黻鼀覐趃鼢勴龠儱儭儮嚘櫽嚗麘澚瀇囒 奰嬼屩屪巀嚩廝懘恝懭懮愄崣曫懫懖 懩鏀攎擽擸瀁櫒擼釼廍曚矄曘擠檹檽 櫡櫆檺檶秿櫇偅檭歞甇鞐瀇瀌瀍溱춙 瀫瀎瀌瀀濻豧纅菾瀊壏熾湬煫嬦獶
F040	0123456789ABCDEF	F140	0123456789ABCDEF
F050	璸瓀妽隻璾璶墿瓂飯嗟澱腳砲癐癓癗	F150	翻亞跳艇整踅轆膠種這關單層隔標
F060	癚曒皾鹽齂會磿礌礓礔礉礐礒礑禭禬	F160	個面部家蘇海等時時沿射還靠段能溜時
F070	槎簜簩禃簠簟簭簝登簨隙簥陳縛繐鏉	F170	经利服系統袁猛說晃準想鉴塗露閒簡闌際
F080	尘涵繢繟繑繠縤繓獖璠翝翧瞔臑臒	F180	韓霍憲憲應難實派蒙較裡提揭精茎蓋
F090 F0A0 F0B0 F0C0 F0D0 F0E0 F0F0	臐驙艞薴藆筊藃辌潱薵薽頉藄薿蒮 藎蒢轖釪薶鵚ດ薸笟餔豽⊵赨蔮魦贉 憓嬇嶑閛媶賟霌嶑嶕蟘锩斔蟗蟙貚蟴 朢璖穘樕襏暺襆襐砪橺謪謧蔳謳漣퀌 譇謯謼禐趮謥譥韾謶謮謤謻謽謺谬豵 貙貘貗膹暬熮贒蹜蹢蹠蹗蹖躎蹥摙蹧	F190 F1A0 F1B0 F1C0 F1D0 F1E0 F1F0	ψ科會理電量系維新重動規制總結協會動供 外項思思給助時的估給助的容計緊診局的營 地包地的运動時利润便約金魚加和約約余約 药動的短路認見能自給命商沿啟於這指局應應 影 截着表析因但起抱於適防(集條例)動層 够這的便应唱問項加這」問要更更動於流起感。
F240	0123456789ABCDEF	F340	0123456789ABCDEF
F250	徿鸉懣攐攍攉攌攎斄庭旝曞櫧櫠櫌櫑	F350	請禪話諮漵豷須貚賊瀯贉遶趪進趫熷
F260	櫙櫋擽櫜櫐葬櫏懫橼歃嬻氌瀙瀧灐瀖	F360	踌鄧買點時勞憤韓椖脖撲幡辴斯單頌彈撲
F270	縠瀡瀢韰瀩瀗凓醀瀪牑爄萟煛爅攈懪	F370	鏞詭彗謳簸鬖強鏬與雜蹤欲鏊鈍鏮鏣
F280	犤犣矋瓋瑮敷瓃甖癠廎晀鄥嶣瓁礝礚	F380	鏕傳單鏀鏒鏧僚闚闛雡郛習霬訂彩
F290 F2A0 F2B0 F2C0 F2D0 F2E0 F2F0	礡礜礗礞谻穧濻簳攐當簬簻糬糪瘜 繵繸緑繷繯繎繲繴繨罋罊羃羆礆翽퓀 聸臗臕軄艡膓藫蔙藭藙遖蔯藚藗藬櫙 藸藘蕌巃藜藑藰藦戅藞藢蠙憻鸁熞蟷 轘蠌颽螷蟼蠈蟿鳒螦襢禭褾浫襡襜禬 澰襙覈勴騉睤譐滶譊漵譓諙똕譋譕	F390 F3A0 F3B0 F3C0 F3D0 F3E0 F3E0	粘鞷肈羇輲縕栙鞙負執滑砖貝風飆組壓儲 饇텑穂蕱腽馷磗雭۶뀷睗殌寎覸钡徥啺鴄莈騞騜 駶揟寪鬌鬌鬑э鬠髋踜婈鰍炝紻霈尡鋊魾惫錜 鯗鯬焦廸韕鯥維鼡魤諈雺鵷鳼詇鷏菺鴺鵱臱鶀絈 鶆鶋鶞鵎鵼鵫鶆鵵鷼腶瀶岛駶鵢挩岛噑鯬鵿 魓鵨麙麔賯蕟樇齸莌瓾駨鵉衘紤餰睯Ѝ朢暺

PA-6610 USER'S MANUAL

Page:3-67

F440 F450 F460 F470 F480	0123456789ABCDEF 嚵嚳聯鍵障威廮廯忀忁懹瘰撄锁搓旗 嘣嫝曤樎懐歴爐偛櫱櫮怺簯瘨瀯瀷瀴 瀱湽瀸綮逘淪灀瀻瀳灁爓鳼犨獽獼璺 皫皪皾盭睭颵闅臱矍潂礥磘礧曡蒢礩	F540 F550 F560 F570 F580	0123456789ABCDEF 鎌錄集結毫關潤濕滾容夠僅結營票納 頗夠觀感結結結鎖供償院夠提緊熱想點 見腳騙購驚點差轉鬐鬢鬆絕就是點與緊 繁餘鏈結關減違熟滴轉晶軸腸碼點點
F490 F4A0 F4B0 F4C0 F4D0 F4E0 F4F0	禲穮擴橹竷籉籈켵籇竀糮譳瀘纁纀 羺勪聹擱臐舋懅艩蘢蒮蘁藾趏侓醝蘄 蘉殗蘌藽囕嬒媣曐蠓嬳襣襦뿺滑譠諹 譝驡澰譥譧殸疉躆躈埅轃樯幆룅轘鞤 逺酃冕陏甂噄醥掔鐋鐓鏻鐠鐠컞撋撧鐕潨 鏆鐙鐍竏鞐墤鏷譒鐎鐖磱鏺鍜盵騶鏿	F590 F580 F500 F500 F500 F500 F560	鶠鴹鶜鵙鶗鶡鴞鵎鶨鶞鶡鶿鶭鷿鶦 鶧黀п欜黥黤鬑黦砋詚趗齛鮉齨卧齨皥 箳儹劗劗啣喞匉嚾孈孇婦曤蔨愇笟棈櫼 燨熚穕僼灄濷忂勪灅蘫焹婨爙獾甗廭 矐礭礱礯籔濸擜猵纇纈纋纆纍韾灑櫌 臝軞嬟蘦隯蘳蘜蘬蘧蘮褏蘠蕠蘝菕
F640 F650 F660 F670 F680	0123456789ABCDEE 軇裡越裏諨羞疑慮補續襮陝灣蒜濤澀 說習賠贔趧而錄整的對管理情層給意錄 親遂強着鈍強動蘇集演愛驗圍團團寬震黨 機雜預應瀕絕續處瑾暫理聽影驚驚	F740 F750 F760 F770 F780	0123456789ABCDEF 羅幹律基礎等問題傳動語言語。基礎的情情地 質堅確會規防察論言語。夏星活話這會的追思選 對給出過速性結果的資源言度緊守的夠詳細語。 對需認過速度是常的過程。
F690 F6A0 F6B0 F6C0 F6D0 F6E0 F6F0	騿膔鬕鬗霋髼舓魓峾謞鯡熋밷鳎鲦 鯏醠鴶鶶鵧緿歕鶝頧襓鵈拹鶛鉘粯鹛 詴鴭鷈穒鶑鷌睮鴖勏嫅麍뽿魌駖鼛嶈 鼚兘鄑齥齹渠讏囆輙嚽葖孍鼝崨巑廲 躘攠黋揝欋欈谎蘣譀磼韑瀓塕爟搫缏 瑎癯瓙瓗廮頔礄禴簯翖篧讅繇婱욻	F790 F780 F7C0 F7C0 F7D0 F7E0 F7F0	驉驒驐膮鬙鬫鷕豝魐墏瞕鰣鰿鏄鰹э 魾聟쌺鰴鷔鰽鰶鸍鷒鳺鶵鷋鷐鷜鴹鷟 鷩騺陰鴑鶋鷕鷝薖頖硓遤尰齂錋竉衦 儽勪壨壧奲孄戱寭彏魐戃戄黨摷斖萅 僣枈饠醔ґ傊穈猘玁猣匔蹜瓐邍鐘綼竸 奟虀蔤磢菃嫧蘻淁蠰圌崼斞孾裓襉豃觾
F840 F850 F860 F870 F880	0123456789ABCDEF 評問書源確實開權相理結該質違案部種 精適就增寬醫營營阿爾維維該維維的條 結該的的時點點點的時點點點的影響。 關聯時點點實麵珍緊測發品的點實實	F940 F950 F960 F970 F980	0123456789ABCDEF 續產絕鬥數變產施彈碰極學構品諸說 時出時轉動態建發到能嘗與會勢時趨 易黑營屬整讀動酯點的罰盡國源贏螺撞 對無遙望碱維基赖蘇輔範錄點圖壓體
F890 F880 F800 F800 F800 F860 F860	齱齰齮톖괘嶜譆孎屭攭喷曮爣蘠櫢頮 箯爣寙瓥朁菅稘禷偤訴瀗誋褏虦赨轚躣孈 衋讔襇賐寗髶躎蟝鱩歒鑫錵釽雥甤靃 竉襩韥竆揗魙鰚鳢鱦蝧環竛鸂緽鸇鸃 鸆鸅鷱鸁鸉鷿鶑鸄麠麠鐜絕篎翧諪囔攮 斸欘懞慖橇溸爦犙曭騢礲薓薋豵缫	F940 F980 F9C0 F9C0 F9D0 F9E0 F9F0	艗穦盠楠艬摵謸翿캃貜躩濵靋頢頿 觏橨舙羪馷羭髸鶡蔰齈棾槬潀踏躞違 嬆瞨騅玂訚緰懲籫瀇걞曤遻塜靎鯢矖 瀶灪麤麔藸龘諅绣嵔墙恛浌媩

# 3-3-2. VFD Board

## 3-3-2-1. Customer Display Specification

## 1. Panel Specification

Item	Spec criteria Description
Display Method	Vacuum Fluorescent Display
Display Pattern	5x7 Dot Matrix
Character Size	5.25 mm(W) x 9.03 mm(H)
Dot Size (X*Y)	0.85 mm(X) x 1.05 mm(Y)
Character Number	40 (20 columns x 2 lines)



## 3-3-2-2. Commands

#### 1. LD220 / P4000

Command	Sub-Item (Hex)	Description
НТ	09	Move cursor right (Only valid in overwrite mode)
BS	08	Move cursor left (Only valid in overwrite mode)
CR	0D	Move cursor to left-most position (Only valid in overwrite
		mode)
ESC @	1B 40	Initialize customer display to initial state,
		clears display buffer, set display mode to shift and sets
		current display row to upper row
ESC U	1B 55	Select upper row as current row (Initial default)
ESC D	1B 44	Select lower row as current row
ESC A n	1B 41 n	Sets customer display disable or enable
		n=D, Disable ; n=E, Enable
ESC C r c	1B 43 r c	Move cursor to specified position
		(Only valid in overwrite mode)
		r = U, upper row ;
		r = D, lower row
		1 c 20 (column number)
ESC R n	1B 52 n	Set international font sets (Please refer
		International Font Set Table)
ESC % n	1B 25 n	Set font pattern
		N=0, selected; n=1, canceled
ESC & n s [p]	1B 26 n s data	Define user font pattern
		N=code for first character
		S=code for last character
		Data= 5 bytes required for each character

#### nternational Font Set Table

n(Hex)	Font Set
30h	U.S.A.
31h	GERMANY
32h	FRANCE
33h	JAPAN

Command	Sub-Item (Hex)	Description
HT	09	Move cursor right
BS	08	Move cursor left
US LF	1F 0A	Move cursor up
LF	0A	Move cursor down
US CR	1F 0D	Move cursor to right-most position
CR	0D	Move cursor to left-most position
НОМ	0B	Move cursor to home position
US B	1F 42	Move cursor to bottom position
US\$xy	1F 24 x y	Move cursor to specified position
		1 x(column) 20 ; 1 y(row) 2
US C n	1F 43 n	Select/cancel cursor display
		n=0, canceled ; n=1, selected
CLR	0C	Clear display screen
CAN	18	Clear cursor line
US X n	1F 58 n	Brightness adjustment, 1 n 4
US E n	1F 45 n	Blink display screen
		0 n 255 (n*50msec) ON / (n*50msec) OFF
		n=0, blinking is canceled
		n=255, display is turned off
ESC @	1B 40	Initialize display
ESCtn	1B 74 n	Select character code table
		0 n 5 (Please refer Chapter 5)
ESC R n	1B 52 n	Select international character set
		(Please refer International Font Set Table)
USrn	1F 72 n	Select/cancel reverse character
		n=0, canceled ; n=1, selected
US MD1	1F 01	Specify overwrite mode
US MD2	1F 02	Specify vertical scroll mode
US MD3	1F 03	Specify horizontal scroll mode
US.n	1F 2E n	Specify period display
		n=display character code
US, n	1F 2C n	Specify comma display
		n= display character code
US ; n	1F 3B n	Specify semicolon (period+comma) display
		n= display character code
US # n m	1F 23 n m	Specify display annunciator,
		turn the annunciator at "m" column on or off
		n=0.1 (Off, On) : 0 m 20
ESC & s n m [a(pl.,p7	1B 26 s n m[a(p1p5)](m-	Define download characters.
(m-n+1)	n+1)	S=1; 32 n m 126; $a=5$ (p1p5 = pattern1pattern5)
ESC ? n	1B 3F n	Cancel user-defined characters.
		32 n 126 (n=character code)
ESC % n	1B 25 n	Select/cancel download character set
· ·	-	n=0, canceled ; n=1, selected
ESC W n s (x1 y1 x2	1B 57 n s (x1 y1	Specify/cancel the window range
y2)	x2 y2)	n=1,2,3,4 (four windows) ; s=0,1 (disable, enable)
		$1 \times 1 \times 2 = 20$ (column) : $1 \times 1 \times 2 = 2$ (row)
118 @	15.40	Execute colf test
USW	1E 54 b m	Execute sen-test
0311111	1F 04 11 11	Display time: 0 h 23; 0 m 59
USU	1F 55	Display of time counter

## 2. EPSON POS D101 (Default)

PA-6610 USER'S MANUAL

#### \*International Font Set Table

n(Hex)	Font Set
00h	U.S.A.
01h	FRANCE
02h	GERMANY
03h	U.K.
04h	DENMARK I
05h	SWEDEN
06h	ITALY
07h	SPAIN
08h	JAPAN
09h	NORWAY
	DENMARK II
0Ah	SLAVONIC/RUSSIA

#### 3. AEDEX

Command	Sub-Item (Hex)	Description
! # 1CR	21 23 31 [data x 20] 0D	Upper line display
! # 2CR	21 23 32 [data x 20] 0D	Bottom line display
! # 4CR	21 23 34 [data x 45] 0D	Upper line message scroll continuously
! # 5CR	21 23 35 hh ':' mm 0D	Set and display 24 hour time
		0 h, m 9
! # 5 CR	21 23 35 0D	Display 24 hour time
! # 6CR	21 23 36 [data x 45] 0D	Upper line message scroll once pass
! # 9CR	21 23 39 [data x 40] 0D	Two line display

#### 4. UTC/S

Command	Sub-Item (Hex)	Description
BS	08	Back space
НТ	09	Horizontal tab
LF	0A	Line feed
CR	0D	Carriage return
DC0 p	10 p	Move curson to specified position, 0 p 39 (Please refer Row Character Position Chart )
DC1	11	Over write display mode
DC2	12	Vertical scroll mode
DC3	13	Cursor on
DC4	14	Cursor off
ESC d	1B 64	Change to UTC enhanced mode
US	1F	Clear display

Row Cha	racte	er Pos	sitior	n Cha	art (D	ecim	al)													
Row1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Row2	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39

Row Cha	aracte	er Po	sitio	n Ch	art (ŀ	lex)														
Row1	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
Row2	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27

### 5. UTC/E

Command	Sub-Item (Hex)	Description
ESC u ACR	1B 75 41 [data x 20] 0D	Upper line display
ESC u BCR	1B 75 42 [data x 20] 0D	Bottom line display
ESC u DCR	1B 75 44 [data x 20] 0D	Upper line message scroll continuously
ESC u ECR	1B 75 45 hh mm 0D	Set and display 24 hour time
		0 h,m 9
ESC u FCR	1B 75 46 [data x 20] 0D	Upper line message scroll once pass
ESC u 1CR	1B 75 49 [data x 40] 0D	Two line display
ESC RSCR	1B 0F 0D	Change to UTC standard mode

#### 6. ADM788

Command	Sub-Item (Hex)	Description
CLR	0C	Clear display
CR	0D	Carriage return
	0E	Clear up line and move cursor to upper line
SLE1		left most end
	0F	Clear low line and move cursor to lower line
SLE2		left most end

#### 7. DSP800

Command	Sub-Item (Hex)	Description
EOT SOH I n ETB	04 01 49 n 17	Select international character set
		( Please refer International Font Set Table )
EOT SOH P n ETB	04 01 50 n 17	Move cursor to specified position
		49 n 48
EOT SOH C n m ETB	04 01 43 n m 17	Clear display range from n position to m position and move cursor to n position
		49 n m 88
EOT SOH S n ETB	04 01 53 n 17	Save the current displaying data (40
		characters) to fi th layer for defito display
		1 n 3( n specify the layer 1, 2, or 3 )
EOT SOH D n m ETB	04 01 44 n m 17	Display the saved data
		1 n 3 (n specify the layer 1, 2, or 3)
		"m" can be ignored
EOT SOH A n ETB	04 01 41 n 17	Brightness adjustment
		1 n 4
EOT SOH % ETB	04 01 25 17	Initialize display

#### \*International Font Set Table

n(Hex)	Font Set
30h	U.S.A.
31h	FRANCE
32h	GERMANY
33h	U.K.
34h	DENMARK I
35h	SWEDEN
36h	ITALY
37h	SPAIN
38h	JAPAN
39h	NORWAY
3Ah	DENMARK II

### 8. CD5220

Command	Sub-Item (Hex)	Description
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical scroll mode
ESC DC3	1B 13	Horizontal scroll mode
ESC Q A CR	1B 51 41 [N]20 0D	Set string display mode, write string to upper line
ESC Q B CR	1B 51 42 [N]20 0D	Set string display mode, write string to lower line
ESC Q D CR	1B 51 44 [N]m20 0D	Upper line message scroll continuously m<40
ESC [ D	1B 5B 44	Move cursor left
BS	08	Move cursor left
ESC [ C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [ A	1B 5B 41	Move cursor up
ESC [ B	1B 5B 42	Move cursor down
LF	0A	Move cursor down
ESD [ H	1B 5B 48	Move cursor to home position
HOM	0B	Move cursor to home position
ESC [ L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [ R	1B 5B 52	Move cursor to right-most position
ESC [ K	1B 5B 4B	Move cursor to bottom position
ESC I x y	1B 6C x y	Move cursor to specified position
		1 x 20(column); y=1,2(row)
ESC @	1B 40	Initialize display
ESC W s x1 x2 y	1B 57 s x1 x2 y	Enable or disable the window range at horizontal
		scroll mode
		s=0,1 (disable, enable)
		1 x1 x2 20(column);y=1,2(row)
CLR	0C	Clear display screen, and clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC * n	1B 2A n	Brightness adjustment
		1 n 4
ESC & s n m	1B 26 s n m	Define download characters
[a(plp5)] (m-n+1)	[a(plp5)]	S-1:32 n m 126:a-5
	(m-n+1)	(a1, b2, a1) and $(a2, a2)$
ESC 2 n	1B 3E n	(p1p3=pallem 1 pallem 5)
200 : 11		
		32 n 126(n=chatacter code)
ESC % n	1B 25 n	Select / cancel download character set.
		n=0, canceled ; n=1, selected
ESC _ n	1B 5F n	Set cursor ON/OFF
		n=0,1 (Ott,On)
ESC f n	1B 66 n	Select international fonts set
ESC c n	1B 63 n	Select tonts, ASCII code or JIS code

9. EMAX		
Command	Sub-Item (Hex)	Description
ESC DC1	B 11	Overwrite mode
ESC DC2	1B 12	Vertical mode
ESC DC3	1B 13	Horizontal scroll mode
ESC [ D	1B 5B 44	Move cursor left
BS	08	Move cursor left
ESC [ C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [ A	1B 5B 41	Move cursor up
ESC [ B	1B 5B 42	Move cursor down
ESC [ H	1B 5B 48	Move cursor to home position
НОМ	0B	Move cursor to home position
ESC [ L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [ R	1B 5B 52	Move cursor to right-most position
ESC [ K	1B 5B 4B	Move cursor to bottom position
ESC I x y	1B 6C x y	Move cursor to specified position
	1 x 20, y =1,2	
ESC @	1B 40	Initialize display
CLR	0C	Clear display screen, and clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC * n	1B2An 1 n 4	Brightness mode
ESC _ n	1B 5F n n = 0,1	Set cursor ON/OFF
ESC f n	1B 66 n	Select international fonts
ESC c n	1B 63 n	Select fonts, ASCII code or JIS code
ESC = n	1B 3D	Select peripheral device, display or printer
		n = 1; enable printer, disable display
		n = 2; disable printer, enable display
		n = 3; enable printer, enable display

\*International Font Set Table

n(Hex)	Font Set
41h	U.S.A.
47h	GERMANY
49h	ITALY
4Ah	JAPAN
55h	U.K.
46h	FRANCE
53h	SPAIN
4Eh	NORWAY
57h	SWEDEN
44h	DENMARK I
45h	DENMARK II
4Ch	SLAVONIC
	RUSSIA
52h	Reserved

\*Select Code Table

n(Decimal)	International Code
41h	Compliance with ASCII code
4Ah	Compliance with JIS code

#### **10. LOGIC CONTROL**

Command	Sub-Item (Hex)	Description
^Q	11	Overwrite mode
^R	12	Vertical mode
^	09	Horizontal tab
^H	08	Back space
^J	0A	Line feed
^M	0D	Carriage return
^S	13	Cursor on
^T	14	Cursor off
^P	10	Digital select e.g.10 00 MSD of top row 10 13 LSD of top row 10 14 MSD of bottom row 10 27 LSD of bottom row
^	1F	Reset
^D n	04 n	Brightness mode 04 FF – 100% Brightness mode 04 60 – 60% Brightness mode 04 40 – 40% Brightness mode 04 20 – 20% Brightness mode

## Software Utility Specification (Protech's in-house utility)

Item Sub-Item
Baud Rate Setting
Command Type Setting
Internation Character Set
Code Page update Utility
Firmware update Utility
MP Testing Utility

### 1.Baud Rate Setting

Item Sub-Item	Sub-Item	Description				
Baud Rate	-	9600/19200				

## 2.Command Type Setting

Hex Code	Command Type
00h	EPSON POS D101
01h	LD220(P4000)
02h	ADM788
03h	LOGIC CONTROL
04h	UTC/S
05h	UTC/E
06h	DSP800
07h	CD5220
08h	EMAX
09h	AEDEX

International Character Set (Code 20H~7FH)	Code Table (Code 80H~FFH)
U.S.A.	PC-437
FRANCE	PC-850
GERMANY	PC-850
U.K.	PC-850
DENMARK I	PC-850
SWEDEN	PC-850
ITALY	PC-850
SPAIN	PC-850
JAPAN	Katakana
NORWAY	PC-865
DENMARK II	PC-850
SLAVONIC/RUSSIAN	PC-437
TURKISH	PC-857

## 3.Language Support & International Character Set

## 3-3-2-3. Character Set

### 1. U.S.A (Standard Character Set) (20h~7Eh)

	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_В	_C	_D	_E	_F
2_		!	"	#	\$	%	&	'	(	)	*	+	,	-		/
3_	0	1	2	3	4	5	6	7	8	9	:	;	<	Ш	>	?
4_	@	А	В	С	D	Е	F	G	Н	Ι	J	K	L	М	Ν	0
5_	Р	Q	R	S	Т	U	V	W	Х	Y	Ζ	[	\	]	٨	Ι
6_	`	а	b	С	d	e	f	g	h	i	j	k	1	m	n	0
7_	р	q	r	S	t	u	V	W	Х	у	Ζ	{		}	~	

### 2. International Character Selection

No.	International	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	U.S.A.	#	\$	@	[	\	]	^	`	{		}	~
1	FRANCE	#	\$	à	0	Ç	§	Λ	`	é	ù	è	
2	GERMANY	#	\$	§	Ä	Ö	Ü	Λ	`	ä	ö	è	$\beta$
3	U.K.	£	\$	@	[	\	]	^	`	{		}	~
4	DENMARK I	#	\$	@	Æ	Φ	Â	^	`	æ	Ø	â	~
5	SWEDEN	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	ITALY	#	\$	@	0	\	é	Λ	ù	à	ò	è	ì
7	SPAIN	R	\$	@	i	Ñ	j	٨	`		ñ	}	~
8	JAPAN	#	\$	@	[	¥	]	٨	`	{		}	~
9	NORWAY	#	¤	É	Æ	Ø	Å	Ü	é	æ	Ø	å	ü
10	DENMARK II	#	\$	É	Æ	Ø	Å	Ü	é	æ	Ø	å	ü
11	SLAVONIC	#	\$	@	[	\	]	Λ	`	{		}	~
12	RUSSIA	#	\$	@	[	\	]	٨	`	{		}	~

Page:3-78

PA-6610 USER'S MANUAL

## 3. Code Page

CP-437

	0	1	2	3	4	5	6	7	8	9	A	В	С	D	E	F
0_	_	_	_	_	_	_	_	_	_			_	_	_	_	_
1_																
2-		!	"	#	\$	%	&	1	(	)	*	+	,	-		1
3_	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4_	@	Α	В	C	D	Ε	F	G	Η	Ι	J	K	L	Μ	N	0
5_	P	Q	R	S	Т	U	V	W	Х	Y	Ζ	[	1	]	۸	-
6_	`	a	b	c	d	e	f	g	h	i	j	k	1	m	n	0
7_	p	q	r	S	t	u	v	W	X	у	Z	{	I	}	~	
8_	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9_	É	æ	Æ	Ô	Ö	δ	û	ù	ÿ	Ö	Ü	¢	£	¥	₽	f
Α_	á	í	Ó	ú	ñ	Ñ	a	ō	j	Г	Г	1⁄2	1⁄4	i	*	»
В_					$\dashv$	4	┦	٦	٦	╡		٦				Г
C_		1	$\top$	$ $		+	┸	┠	L		┛	┳			╋	⊥
D_		$\top$	┱	L	L	F	Г	╉	+		Г					
E_	α	ß	Γ	π	Σ	σ	μ	τ	Φ	θ	Ω	δ	$\infty$	φ	ε	$\cap$
F_		±	2	$\leq$	ſ	J	÷	×	•	•	•		n	2		

Japa	Japanese Katakana															
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_В	_C	_D	_E	_F
8_																
9_								$\rightarrow$	←	1	Ļ	×	÷	±	١٧	2
$A_{-}$		•	Г		`	•	7	フ	イ	ウ	I	才	ヤ	ユ	Ш	ツ
В_		7	イ	ウ	I	才	力	+	ク	ケ	コ	サ	ツ	ス	よ	ソ
C_	9	チ	ツ	テ	ト	ナ	11	X	ネ	/	ハ	ヒ	フ	$\overline{}$	ナ	マ
$D_{-}$	111	4	X	モ	ヤ	ユ	Ξ	ラ	IJ	ル	arbornoise	Π	ワ	ン	"	0
E_				0	•	$\Diamond$						▼	$\langle\!\!\langle$	>	1∕₂	¼
<b>F</b> _	°C	Ŧ	小	中	大	人	分	円	年	土	金	木	水	火	月	$\square$

# CP-850

	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	à	å	Ç	ê	ë	è	ï	î	ì	Ä	Å
9_	É	æ	Æ	Ô	ö	ò	û	ù	ÿ	Ö	Ü	Ø	£	Ø	X	f
Α_	á	í	Ó	ú	ñ	Ñ	<u>a</u>	ō	j	R	7	1/2	1⁄4	i	«	»
В_					$\neg$	Á	Â	À	C			٦		¢	¥	٦
C_	L		$\top$	$\vdash$		+	ã	Ã	L				F		╬	¤
D_	ð	Ð	Ê	Ë	È	I	Í	Î	Ϊ		Г			ł	Ì	
E_	Ó	ß	Ô	Ò	Õ	Õ	μ	þ	þ	Ú	Û	Ù	ý	Ý	-	1
F_		±	_	3⁄4	¶	§	÷	د	0		•	1	3	2		

CP-865

	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_В	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	à	å	Ç	ê	ë	è	ï	î	ì	Ä	Å
9_	É	æ	Æ	Ô	ö	ò	û	ù	ÿ	Ö	Ü	Ø	£	Ø	₽	f
Α_	á	í	Ó	ú	ñ	Ñ	<u>a</u>	ō	j	Г	٦	1/2	1⁄4	i	«	¤
В_					$\neg$	=	$\neg$		٦	$\exists$		٦				٦
C_			$\neg$	$\vdash$		+	╞	┢	L				F		╞	
D_		$\top$		L	L	F	Г	+	+		Г					
E_	α	ß	Γ	π	Σ	σ	μ	τ	Φ	θ	Ω	δ	$\infty$	φ	ε	$\bigcap$
F_		±	≥	≤	ſ	J	÷	*	0	•	•		n	2		

# 3-3-3. MSR Board

## **ISO Format:**

Track 1 (IATA)

Track 2 (ABA)

PHA, 5-bits/characters ?
--------------------------

Track 3 (THRIFT-TTS)

;	210bpi, 107 ALPHA, 5-bits/characters	?
---	--------------------------------------	---

# **3-4. UTILITY UPDATE**

# 3-4-1. OS

## 3-4-1-1. Update Android via OTA

1. Select **Recovery** icon.



2. Type the password "prox" to login.



PA-6610 USER'S MANUAL

3. There are two ways available for OTA update.



# I. With USB

1. Confirm two things in your USB disk. The update package needs to be named *ota\_update.zip* and USB disk must be in FAT32 file system format.

Construction Recovery		
The update and the US	package needs to be named B disk must be in FAT32 file s	ota_update.zip system format.
	OTA Update	

- 2. Put *ota\_update.zip* in USB disk and plug into device.
- 3. Click OTA Update button.

### II. With WiFi

1. Firstly make sure the device is connected to Internet.



- 2. Click OTA update button.
- 3. Wait for a few minutes and the system will download the update package.



## III. Update Progress

- 1. When the *ota\_package.zip* is ready, system will re-boot in recovery mode and update package.
- 2. Below picture would show up during the update progress.



- 3. When it finishes, the system will re-boot again to Android.
- 4. Finished.

# 3-4-1-2. Update Android Image by Linux PC

Follow below process **carefully**. Before updating starts, make sure you have the same hardware and software environment as follows:

## Hardware environment:

Micro USB to USB:



### Software environment:

- Operating System: Windows 7
- USB Recovery Driver (Protech will provide)

## I. Install USB Recovery Driver

1. Copy the T30.APxx.USB.recovery.driver folder to C:\

★ Favorites ■ Desktop ● Downloads	Name *	Date modified	Туре	Size		T
Desktop	🎉 image					
Downloads		1/1/2013 10:19 AM	File folder			
	🍌 inetpub	5/21/2011 8:23 PM	File folder			
Recent Places	퉬 Intel	7/27/2012 3:51 PM	File folder			
	\mu opos	7/27/2012 6:07 PM	File folder			
词 Libraries	🍌 PerfLogs	5/21/2011 8:23 PM	File folder			
Documents	🎉 Program Files	8/1/2012 2:18 PM	File folder			
J Music	T30.APxx.USB.recovery.driver	1/1/2013 10:19 AM	File folder			
Pictures	🔰 Temp	7/27/2012 6:06 PM	File folder			
Videos	\mu Users	1/1/2013 10:17 AM	File folder			
	J Windows	1/1/2013 10:15 AM	File folder			
🖳 Computer	🗎 ktraceC	7/30/2012 11:53 AM	Text Document		2 KB	
두 Network						

 Connect power to the board PA-6810. Use micro-USB to connect PA-6810 and computer. Then press botton 2 for 20 seconds. Then press botton 1 and hold it. (Do not release your finger from botton 1) Then press botton 2.

Then release your finger from **botton 1**.



3. Right click on Computer icon. Then click Properies.



PA-6610 USER'S MANUAL

4. Click Device Manager.



5. You will see the following picture.

A Device Manager	- • ×
Eile Action View Help	-
Elle       Action       View       Help         Image: Server Ser	

Page:3-90

PA-6610 USER'S MANUAL

6. Right click **APX**. Then click **Properies**.

🚔 Device Manager	and the second se	×
File Action View Help		
▲		
Disk drives		
Display adapters		
DE ATA/ATAPI controllers		
Keyboards		
Mice and other pointing devices		
Monitors		
Network adapters     Other devices		
	1	
Ports Update Driver Software		
Proce Disable		
Soun Uninstall		
Scan for hardware changer		
D Unive Scan for hardware changes		
Properties		
Opens property sheet for the current selection.		

7. Click **Driver** then **Update Driver**.

General Driver Details	
APX	
Driver Provider:	Unknown
Driver Date:	Not available
Driver Version:	Not available
Digital Signer:	Not digitally signed
Driver Details	To view details about the driver files.
Update Driver	To update the driver software for this device.
Roll Back Driver	If the device fails after updating the driver, roll back to the previously installed driver.
<u>D</u> isable	Disables the selected device.
<u>U</u> ninstall	To uninstall the driver (Advanced).

PA-6610 USER'S MANUAL

8. Click "Browse my computer for driver software"



9. Enter "C:\T30.APxx.USB.recovery.driver" and click "Next"

G 🔲 Update Driver Software - APX	×
Browse for driver software on your computer	
Search for driver software in this location:	
C\T30.APxx.USB.recovery.driver Browse	
Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.	
Next	Cancel

10. If you see the picture below, click Install this driver software anyway.



11. After a while, you will see the screen below.



PA-6610 USER'S MANUAL

12. You can double check if your driver is successfully installed in Device Manager.



# II. Update Android image

1. Copy "image" folder to "C:\".

						×
🕒 🕞 🗢 🏭 🕨 Compute	r 🕨 New volume (C:) 🕨	<b>→</b> 4 <sub>7</sub>	Search New volume	: (C:)		P
Organize 👻 🔭 Open	New folder			8== -		•
🔆 Favorites	Name	Date modified	Туре	Size		
Desktop	🐊 image	1/1/2013 10:19 AM	File folder			
Downloads	🍌 inetpub	5/21/2011 8:23 PM	File folder			
🔛 Recent Places	🎉 Intel	7/27/2012 3:51 PM	File folder			
	OPOS	7/27/2012 6:07 PM	File folder			
Calibraries	PerfLogs	5/21/2011 8:23 PM	File folder			
Documents	🎉 Program Files	8/1/2012 2:18 PM	File folder			
J Music	T30.APxx.USB.recovery.driver	1/1/2013 10:19 AM	File folder			
Pictures	\mu Temp	7/27/2012 6:06 PM	File folder			
Videos	Users	1/1/2013 10:17 AM	File folder			
	J Windows	1/1/2013 10:15 AM	File folder			
🖳 Computer	ktraceC	7/30/2012 11:53 AM	Text Document		2 KB	
📬 Network						
2 items selecte	ed Date modified: 1/1/2013 10:19 AM					

 Connect power to PA-6810. Use micro-USB to connect PA-6810 and computer. Then press botton 2 for 20 seconds. Then press botton 1 and hold it. (Do not release your finger from botton 1) Then press botton 2. Then release your finger from botton 1.



3. Right click on Computer. Then click **Properies**.


4. Click Device Manager.

				<b>- X</b>
Control Panel >	System and Security    System	▼ 4 <sub>7</sub>	Search Control Panel	Q
Control Panel Home Device Manager Second Second Second System protection Advanced system settings	View basic information Windows edition Windows 7 Ultimate Copyright © 2009 Microso Service Pack 1	about your computer	red.	•
	System Rating: Processor: Installed memory (RAM): System type: Pen and Touch: Computer name, domain, and	<b>5:0</b> Windows Experience In Intel(R) Pentium(R) CPU G21: 8:00 GB (3:41 GB usable) 32-bit Operating System No Pen or Touch Input is avail workgroup settings	ndex 20 @ 3.10GHz 3.10 GHz silable for this Display	
See also Action Center Windows Update Performance Information and Tools	Computer name: Full computer name: Computer description: Workgroup:	897-PC 897-PC WORKGROUP	😵 Change sett	ings 

5. Check device status in **Device Manager**. If you don't see **NVIDIA USB Boot**recovery driver for Mobile devices here, repeat step 2 to 4.



PA-6610 USER'S MANUAL

6. Click **Start** in Windows. Then type "cmd" as the picture shows below. Then press Enter.



7. The window below will appear.



8. Type "cd C:\image", then press Enter.

C:\Windows\system32\cmd.exe	
Microsoft Windows [版本 6.1.7600] Copyright (c) 2009 Microsoft Corporation. All rights reserved.	<b>•</b>
C:\Users\Sonic}cd C:\image	
C:\image>	
	Ŧ

9. Type "**nvflash\_kai**", then press Enter.



10. Updating.



11. When you see **Press enter to continue:**, press Enter.

C:\Windows\system32\cmd.exe	
deleting device partitions	
creating partition: BCT	
creating partition: PT	
creating partition: EBT	
creating partition: NUC	
creating partition: EKS	
creating partition: GP1	
creating partition: SOS	=
creating partition: LNX	
creating partition: APP	
creating partition: CAC	
creating partition: MSC	
creating partition: USP	
creating partition: MDA	
creating partition: UDA	
creating partition: GPT	
sending file: bootloader.bin	
953392/953392 bytes sent	
bootloader.bin sent successfully	
sending file: microboot.bin	
∖ 78736/78736 bytes sent	
microboot.bin sent successfully	
sending file: eks.dat	
- 44/44 bytes sent	
eks.dat sent successfully	
sending file: recovery.ing	
∖ 5629952/5629952 bytes sent	
recovery.ing sent successfully	
sending file: boot.img	
- 5277696/5277696 bytes sent	
DOOT.1Mg Sent Successfully	
Senaing File: System.ing	
- 2441067767244106776 Dytes sent	
Phase enter to continue.	
iress enter to continue.	
C:\image>	-

12. Then PA-6810 Android image has been updated completely.

### 3-4-2. Printer Board

1. Prepare Files:

Rename F00-1030-000-01-xxxxx.bin as "MB1030.bin". Copy MB1030.bin to USB storage. Then insert this device into the USB socket.

2. Click **FW Update** button.

ME-1000 Printer Update Application The FW update packa Codepage update pac	ige needs to be name kage needs to be nai	d MB1030.bin, The med MB1030.cp
FW Update	CodePage Update	Get Info

#### 3-4-2-1. Update CGROM CodePage Font

- Prepare Files: Rename JPsjis-1030-001-03-xxxxx.cp as "MB1030.cp". Copy MB1030.cp to USB storage. Then insert this device into the USB socket.
- 2. Click **CodePage Update** button on the same screen as above.

### 3-4-3. VFD Board

1. Prepare Files:

Rename F00-4103-000-01-xxxxx.bin to "vfdupdate.bin". Copy vfdupdate.bin to USB storage. Then insert this device into the USB socket.

2. Click Update button.



## 3-4-4. MSR Board

- Prepare Files: Rename F00-3013-000-01-xxxxxx.bin to "msrupdate.bin". Copy msrupdate.bin to USB storage. Then insert this device into the USB socket.
- 2. Click **Update** button.



# SYSTEM DIAGRAMS



This appendix contains exploded diagrams and part numbers of the PA\_6610 system.

Sections included:

- Exploded Diagram for System Top Module
- Exploded Diagram for MSR
- Exploded Diagram for VFD
- Exploded Diagram for Printer
- Exploded Diagram for System Bottom Module

# EXPLODED DIAGRAM FOR SYSTEM TOP MODULE



NO.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-272-40004311	2
2	SCREW	22-242-30005311	1
З	PULLER	30-080-04100000	1
4	INSIDE BOX TOP COVER	20-004-03001199	1

Page: A-2

PA\_6610 USER'S MANUAL

# **Basic construction**



N0.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-242-30005311	1
2	SCREW	22-122-30080011	14
3	TOUCH CABLE	27-043-12402071	1
4	LED LENS	30-012-02100000	1
5	LCD RUBBER	30-013-01100199	1
6	HINGE	30-002-09130220	Э
7	TOUCH PANEL	52-380-01510401	1
8	LCD ASSY (as Panel Module exploded drawing)		

# 1024 x 768 LCD panel



N0.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-230-30005811	1
2	CABLE CLAMP	30-059-04100000	1
З	LED HOUSING	30-014-04100165	1
4	LED CABLE	27-018-19704071	1
5	INCERTER CABLE	27-015-16506111	1
6	LVDS CABLE	27-020-16505111	1
7	CABLE CLAMP	30-023-04300010	2
8	CPT LCD HOLDER	20-029-03003199	1
9	CPT 10.4" LCD	52-351-01104019	1
10	INVERTER	52-101-08010203	1
11	INVERTER MYLAR	30-056-02100165	1
12	SCREW (SCREW HEAD MARK RED COLOR)	22-272-30004318	2
13	SCREW (SCREW HEAD MARK BLUE COLOR)	22-272-20004011	4
14	WIRE MOUNT	90-042-04200000	2
15	PORON_B	30-013-24700000	2
16	PORON_A	30-013-24600000	2

# **EXPLODED DIAGRAM FOR MSR**

#### **Basic construction**



NO.	COMPONENT NAME	PART NO.	Q'TY
1	EVA BLOCK	30-013-15100165	2
2	TOP CASE (BLACK)	30-003-28610199	1
	TOP CASE (WHITE)	30-003-28410199	-

# MSR module



NO.	COMPONENT NAME	PART NO.	Q'TY
1	MSR BRACKET	20-029-03005165	1
2	MSR	MB-3013RA-11N	1
3	SCREW	22-215-30060011	2
4	MSR CABLE	27-014-27004111	1

# Top case without MSR



NO.	COMPONENT NAME	PART NO.	Q'TY
1	MSR EVA	90-013-15100199	1
2	TOP CASE	DEPENDS ON COLOR	1

# **EXPLODED DIAGRAM FOR VFD**

#### **Basic construction**



NO.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-272-30004318	2

# VFD module



NO.	COMPONENT NAME	PART NO.	Q'TY
1	VFD CABLE	27-051-26805111	1
2	VFD MOUDULE	MB-4103RA-11N	1
З	PRINTER EJECTOR WITH PRINTER	30-002-28410199	1
4	VFD LENS	30-021-02130199	1
5	VFD COVER	30-002-28910199	1

## Without VFD module



N0.	COMPONENT NAME	PART NO.	Q'TY
1	VFD COVER	30-002-28910199	1
2	PRINTER EJECTOR WO PRINTER	30-002-28510199	1

# **EXPLODED DIAGRAM FOR PRINTER**

#### **Printer board**



NO.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-232-25004011	2
2	PRINTER PCB COVER	20-004-03001165	1
З	PRINTER CABLE	27-024-27003111	1
4	PRINTER POWER CABLE	27-012-16502071	1
5	PRINTER PCB	MB-1030RA-11N	1
6	SCREW	22-272-20004011	4

#### **Basic construction**



NO.	COMPONENT NAME	PART NO.	Q'TY
1	2IN SIDE WALL L	30-002-28210268	4
	3IN SIDE WALL L	30-002-28710199	1
2	3IN SIDE WALL R	30-002-28610199	1
З	SCREW (SCREW HEAD MARK RED COLOR)	22-222-30004011	Э
4	SCREW (SCREW HEAD MARK BLUE COLOR)	22-242-30005311	2

Page: A-14

PA\_6610 USER'S MANUAL

## 2 inch printer module



NO.	COMPONENT NAME	PART NO.	Q'TY
1	PC SHEET	90-056-02100199	1
2	ROTARY DAMPER	30-022-09110000	1
З	PRINTER BOX3 ASSY	20-040-03002199	1
4	EMI SHIELDING GASKET	90-050-31100000	2
5	PRINTER ADD ARM	30-002-09110199	1
6	PRINTER COVER SPRING R	23-000-05000502	1
7	SCREW (SCREW HEAD MARK RED COLOR)	22-272-20004011	З
8	2IN PRINTER MOUDULE A	52-701-01020003	1
9	PRINTER COVER SPRING L	23-000-06000502	1
10	SCREW (SCREW HEAD MARK BLUE COLOR)	22-242-30005311	З
11	PAPER COVER PIN	20-045-19011199	1

PA\_6610 USER'S MANUAL



NO.	COMPONENT NAME	PART NO.	Q'TY
1		30-012-02110165	4
	FAFER HOLDER	30-012-10130210	I
2	SCREW	22-122-30080011	2
З	PRINTER DOOR	30-007-12110268	1
4	SCREW	22-125-20008011	2
5	2IN PRINTER MOUDULE B	52-701-01020003	1

# EXPLODED DIAGRAM FOR SYSTEM BOTTOM MODULE



NO.	COMPONENT NAME	PART NO.	Q'TY
1	SCREW	22-230-30005811	1
2	No.4 Boss	22-692-40048051	4
З	CABLE CLAMP	30-023-04300010	1
4	SCREW	22-242-30005311	7
5	OPEN CLOSED BUSHING	30-026-04300000	2
6	SD CARD	SEE ORDER	1
7	COM 3 CABLE	27-024-16502031	1



NO.	COMPONENT NAME	PART NO.	Q'TY
1	PCB SPACER	90-041-04700000	4
2	FOAM TAPE	94-026-00201268	1
З	BOTTOM CASE	30-001-28110220	1
4	MAINBOARD	PB-6810	1
5	CANOE CLIP	30-076-04200000	2
6	RUBBER FOOT	30-004-01500000	2
7	INSIDE BOX ASSY	20-040-03001268	1
8	EMI SPONGE	30-050-31200000	2
9	SNAP BUSHING	30-026-04500000	1
10	WIRELESS ANTENA	27-029-16506071	1
11	ROLLER PIN	20-045-19012199	2
12	ROLLER	30-041-04100165	2