# Oracle® MICROS TM-T88VI Thermal Printer Setup Guide





Oracle Hospitality TM-T88VI Thermal Printer Setup Guide Release 1.0

F35239-02

Copyright © 2020,2023 Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

# Contents

Preface	iv
1 Oracle TM-T88VI Features	1-1
Oracle Part Numbers and Description	1-2
What's in the Printer Box	1-2
Before Use	1-2
Printer Specifications	1-2
Printer Dimensions	1-4
Printer Self-Test	1-4
Dynamic Status Sheet	1-6
2 Printer Configuration	2-9
Printer Switch Definitions	2-9
Multilingual Support	2-10
Epson Printer Resident Fonts	2-11
3 UB-IDN02 Specifications (IDN model only)	3-14
Switches and Indicators	3-15
IDN Device ID Table	3-15
Baud Rate Table	3-15
IDN Annunciator	3-16
Annunciator Mode Toggle DIP Switch Setting	3-16
IDN LED Indicator IDN Protocol Standard	3-17 3-17
IDN Self-Test	3-17 3-17
IDIN Sell-Test	3-17
4 USB-IDN Communication	4-19
Workstation 8 Connection Diagram	4-20
5 Multilingual Printing with Simphony and RES 3700	5-23
6 Windows Regional Language Setting for RES and OPOS	6-24



# **Preface**

Oracle MICROS is proud to offer the next generation Epson thermal printer for our global customers. The printer is based on the Epson Asian model of the TM-T88VI, which includes expanded memory and custom Oracle MICROS firmware. This setup guide describes the unique features and setup required for operation specific to Oracle MICROS and multilingual printing from Oracle Food & Beverage point of sale applications. Multilingual printing can be accomplished using the native built-in ethernet interface or the new UB-IDN02 interface card. Custom printer and IDN firmware eliminates the need for designated ethernet and IDN multilingual interface boards. All multilingual fonts and Unicode command sets are now printer-resident and preloaded at the factory.

#### **Audience**

This document is intended for those who set up, install, and operate the Oracle TM-T88VI.

### **Important Information**

Additional information regarding integration with the POS system or other related software applications can be obtained from the respective application guides. The Epson User's and Technical Reference Guide should also be referenced to understand the standard features of the printer.

The following product specifications and/or manual content may be changed by Oracle MICROS or Epson without prior notice.

### **Customer Support**

To contact Oracle Customer Support, access My Oracle Support at the following URL:

https://support.oracle.com

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to recreate
- Exact error message received and any associated log files
- Screenshots of each step you take

#### **Documentation**

Oracle Food & Beverage product documentation is available on the Oracle Help Center at http://docs.oracle.com/en/industries/food-beverage

Epson TM-T88VI Standard documentation is available from their global website at: https://epson.com/Support/Point-of-Sale/OmniLink-Printers/Epson-TM-T88VI-Series/s/SPT\_C31CE94061#manuals

Epson TM-T88VI User's Manual

https://files.support.epson.com/pdf/pos/bulk/tm-t88vi\_um\_en\_02.pdf



### Epson Technical Reference Guide

https://files.support.epson.com/pdf/pos/bulk/tm-t88vi\_trg\_en\_revg.pdf

### **Revision History**

Date	Description of Change
November 2020	Initial publication.
June 2023	Added USB-IDN functionality.



# Oracle TM-T88VI Features



- Two models, Serial/Ethernet & IDN, will support all the Oracle Food & Beverage global language capabilities and safety compliance that was once more region specific with the legacy TM-T88IV and TM-T88V printers.
- Unicode multilingual fonts and Epson native multilingual fonts preinstalled on the printer (firmware version 3.02B or above is required).
- IDN/IDN-ML protocol supported through the non-multilingual UB-IDN interface board (firmware version A4.52 or above is required).
- Ethernet multilingual functions supported through the built-in Ethernet interface. No separate Ethernet interface required.
- Compatible with previous Epson tools such as Font Manager.
- Oracle Discovery Protocol supported on the built-in Ethernet interface.
- RFID Tag w/printer identifier (not currently used by Oracle Food & Beverage applications).
- SNMP is disabled.
- All Wi-Fi dongle and Bluetooth dongle support is disabled.
- New USB-IDN functionality introduced with printer FW version 3.14

# Oracle Part Numbers and Description

Table 1-1 - Oracle Part Numbers and Description

Oracle Marketing P/N	Oracle Marketing Description
7602414	Epson TM-T88VI thermal receipt printer with power supply, serial and ethernet interfaces, and 3-foot RJ45 to DB25 serial cable
7602415	Epson TM-T88VI thermal receipt printer with power supply, IDN interfaces, and 3-foot IDN 8-pin to 6-pin cable

# What's in the Printer Box

Aside from what is noted in the above descriptions, each printer contains the following items:

Note: You must order the country-specific C-13 straight power cord separately.

- Connector cover
- Sample Roll paper
- Roll paper guide
- Bottom I/O Connector cover
- Screws
- Power switch cover
- Epson Standard Setup Guide
- IDN Switch Settings Sheet (IDN printer SKU only)

# **Before Use**

Refer to the *Epson TM-T88VI User's Manual* to get acquainted with the part names and functions of the printer. The manual describes basic setup, paper installation, and printer cleaning. For details about the functions and operating procedures of this product and other Epson related software, refer to the *Technical Reference Guide*.

# **Printer Specifications**

Printing Method		Thermal line printing
Print Speed		250mm/sec
Roll paper	Paper Width	80 mm paper width setting: 79.5 mm ± 0.5 mm {3.13" ± 0.02"}
		58 mm paper width setting: 57.5 mm ± 0.5 mm {2.26" ± 0.02"}
	External	Maximum 83 mm {3.27"}
	Diameter	, ,



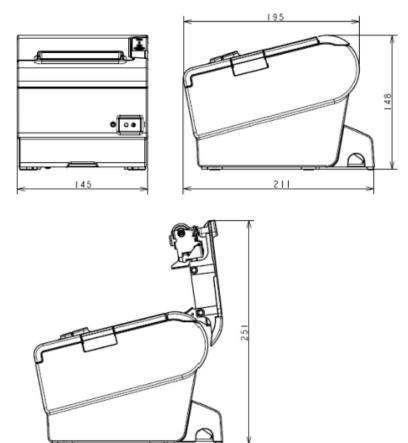
	Core Internal	12 mm {0.47"}		
	Core External Diameter	18 mm {0.71"}		
Oracle Supported	Interfaces	T88VI w/Serial Interface:	T88VI w/IDN Interface:	
		Serial: RS-232	IDN: RS-485	
		Ethernet: 10BASE-T/100BASE-	Ethernet: 10BASE-T/100BASE-TX	
		TX USB: USB 2.0 Full-speed (12 Mbps)	USB: USB 2.0 Full-speed (12 Mbps)	
NFC (RFID Tag)		Transmission Standard: ISO1443A		
,		Frequency: 13.56 MHz		
		Resonance Frequency: 14.30 +- 0.	55MHz	
		Memory: 144 Bytes		
		Transmission Distance: Approx 10mm (0.39") from the RFID Tag		
Supply Voltage		DC + 24 V ± 7%		
Current Consump	tion	1.8 A		
AC Power Consum	nption*3(100 V	Operating: Approx. 30.8 W		
to 230 V/50 to 60	Hz)	Standby: Approx. 0.8 W		
Temperature		Operating:5 to 45°C {41 to 113°F}		
•		Storage:-10 to 50°C {14 to 122°F}, except for paper		
Humidity		Operating:10 to 90% RH		
		Storage:10 to 90% RH, except for paper		
Overall dimension	ns	148 × 145 × 195 mm {5.83 × 5.71 × 7.68"} (H × W × D)		
Weight (mass)		Approx. 1.6 kg {3.5 lb}		



- A. RJ-45 Ethernet
- B. RJ-11 Drawer Kick
- C. RS-232 Serial Interface
- D. 24v Power Port
- E. USB Type A (disabled)
- F. USB Type B (Normally covered, supported by USB-IDN connection)

# **Printer Dimensions**

Dimensions shown in millimeters.



# **Printer Self-Test**

The printer provides a self-test operation that checks the operation of the printer hardware and reports current operating parameters.

### Start the Self-Test

To start the self-test operation, close the roll paper cover, and then hold the **Feed** button while powering up the printer.

You can check the following items using the self-test:

- Product name
- Firmware version
- Product serial number
- Interface type

- Resident fonts
- Maintenance counter information (head running length, number of times of autocutting)
- DIP switch settings

Figure 1-1 - Self-Test Example

```
Printer Name
    IV88T-MT
  Printer Firmware Version
   3.14B ORA-RTSC
           : 3.14 ORA-RTSC
   Network : 05.01_r03-0ra
          : 01.27_r02-0ra
   TM-i
  SERIAL No.
   X6Y5000195
  USB Interface or other
  Serial Interface
               : 9600 bps
   Baud rate
   Data bits
                : 8 bits
   Parity
                : none
   Stop bit
                : 1 bit or more
   Handshaking : XON/XOFF
   Receive error: prints '?'
  Ethernet Interface
                   : 50-57-9C-F4-EE-95
     MAC Address
     IP Address
                    : (None)
     Subnet Mask
                    : (None)
     Default Gateway: (None)
  Buffer Capacity
    4K bytes
 Handshaking Operation (busy condition)
   Receive buffer full
 Resident Character
   Alphanumeric
   Simple Chinese
  Japanese
  Korean
  Traditional Chinese
  Thai 3 pass
  Thai 1 pass
  Vietnamese
Default Active Multi-Language Font
```

```
Printing Mode for Thai Character
  Thai 1 pass
Multilingual Font(s) in Printer
  NAME
                 ID VER TYP
 C/P map (Arabic) Amap 0.10
  Unicode_24
                 U24 0.81 THF
  Uni_Japanese24
                 U24J 0.81 THF
  Uni_TradChin24
                 U24T 0.81 THE
  Codepage Map
                 Vmap 0.10
ML Font Memory
  Available in KByte: 2885
  Used in KByte:
                     4283
ML Configuration
  Mixed width:
                 ON
  Arabization:
                 ON
  Indic Digits:
                 OFF
Virtual IDN
  Device ID: 01
Automatic Line Feed
 (CR command function)
  Disable
Print Density
  LIGHT [ 1 2 3 ] DARK
 Recovery Point
   Factory
 Maintenance Information
   Thermal Head
                             0.465 km
   Autocutter
                              3734 cuts
 DIP Switch 1
   12345678
 DIP Switch 2
   12345678
    Select Modes by pressing Feed button.
   Continue SELF-TEST: Less than 1 second
                      : 1 second or more
```

Mode Selection

South Asia

### To continue the self-test:

Briefly press the Feed button (less than one second)

The printer prints a rolling pattern on the roll paper using the built-in character set. After "\*\*\* completed \*\*\*" prints, the printer initializes and switches to standard mode.

### Figure 1-2 - Self-Test Example

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHI
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJ
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLM
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLM
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN
```

# **Dynamic Status Sheet**

The dynamic status sheet displays the following network-related information:

- MAC address
- Physical Layer settings
- Connection status
- QR code (MAC address)
- Network firmware version
- IP address setting method
- IP address, subnet mask, default gateway
- NTP server connection information
- Time of internal settings
- Results of operation check of TM-Intelligent function
- Installed Unicode fonts

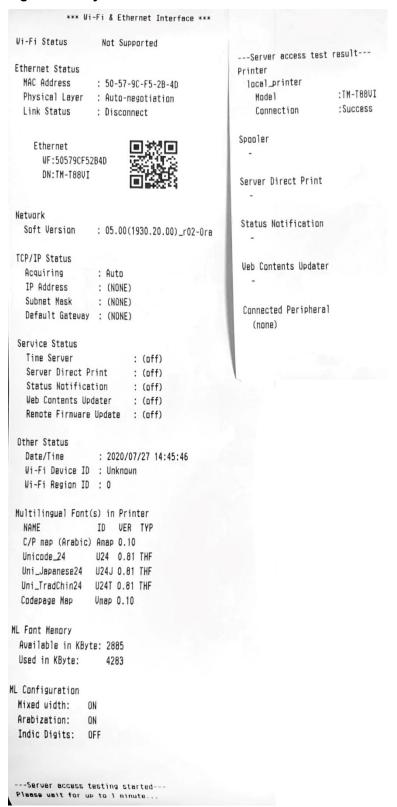
# **Dynamic Status Sheet Operation**

There are two methods to print a dynamic status sheet.

- 1. Print method using the status sheet button:
  - With the roll paper cover closed, press and hold the status sheet button for 3 seconds or longer.
- 2. Print method using the Feed button:
  - Open the roll paper cover.
  - Press and hold the Feed button for approximately 1 second until the Paper LED begins flashing.

Within 1 minute, close the roll paper cover.

Figure 1-3 - Dynamic Status Sheet



# **Printer Configuration**

The following tables describe the mandatory and recommended switch settings for the printer. "x" means "don't care." Switches not described in the tables may be configured according to the requirements of the application.



### With UB-IDN or UB-S01 (Serial Interface) Installed

Switch	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8
Setting	Х	Χ	OFF	OFF	OFF	OFF	ON	OFF

Switch	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8
Setting	Х	OFF	ON	Χ	Χ	OFF	Χ	OFF

# **Printer Switch Definitions**

There are two DIP switches located under the printer behind a cover plate.

Dip Switch 1

Dip Owitch 1				
Switch Number	Function	ON	OFF	Factory Setting
1	Data reception error	Ignored	"?" is printed	OFF
2	Receive buffer capacity	45 bytes	4 KB	OFF
3	Handshake	XON/XOFF	DTR/DSR	OFF
4	Bit length	7 bits	8 bits	OFF
5	Parity check	Yes	No	OFF
6	Parity selection	Even	Odd	OFF
7	Transmission speed	See Table Below		ON
8	selection			OFF

Transmission	Switch Number		
Speed (bits/sec)	7	8	
Soft Panel Setting	ON	ON	
4800	OFF	ON	
9600	ON	OFF	
19200	OFF	OFF	

### NOTE:

For Oracle's TM-T88VI with the new IDN card installed, the internal transmission speed will autobaud up to 38400. To take full advantage of this the IDN transmission speed switch settings will also be factory set to 38400. IDN external speed selection on legacy printers must be set to 9600.

### **DIP Switch 2**

Dii Owiton 2				
Switch Number	Function	ON	OFF	Factory Setting
1	Handshaking (Busy Condition)	Receive buffer full	Offline Receive buffer full	OFF
2	Reserved (Do not change)	Fixed t	Fixed to OFF	
3	Drint density selection	See Table Below		ON
4	Print density selection			OFF
5	Recovery conditions from receive buffer BUSY (Enabled when the receive buffer capacity is set to 4 KB)	When the remaining becomes 138 bytes	When the remaining becomes 256 bytes	OFF
6	Reserved (Do not change)	Fixed to OFF		OFF
7	Pin 6 reset signal	Used	Not used	OFF
8	Pin 25 reset signal	Used	Not used	OFF

Function	Switch Number		
Function	3	4	
Print Density (Standard)	OFF	OFF	
Print Density (Medium)	ON	OFF	
Print Density (Dark)	OFF	ON	
Prohibited	ON	ON	

# **Multilingual Support**

The TM-T88VI provides enhanced language support, adding Unicode fonts available through the built-in ethernet interface, the non-multilingual UB-IDN interface and the new USB-IDN interface. Fonts are maintained inside TM-T88VI in approximately 7 MB of non-volatile memory. This is supported with Simphony using the IDN, USB-IDN & ethernet interface.



### NOTE:

- The Serial interface does not support multilingual with Simphony and RES
- RES will require that the default printer resident font be changed to match the desired language when using the IDN or ethernet interface

The standard fonts are derived from the Arial Unicode MS font. The following font files are loaded to the printer. Current size of the provided font files is approximately 4.5 MB

Font	Target printer	Glyph Size
Arial Unicode MS (full set) with default combined Simplified Chinese and Korean localization	Thermal	24 x 24
Arial Unicode MS subset, including only Traditional Chinese localization	Thermal	24 x 24
Arial Unicode MS subset, including only Japanese localization	Thermal	24 x 24

# **Epson Printer Resident Fonts**

Epson-native multilingual Kanji fonts, including Simplified Chinese, Traditional Chinese, Japanese, Korean and South Asia coexist along with the Unicode font. However, only one of the Epson Kanji fonts is activated and can be used for printing at a time. For applications other than Simphony, the printer native resident font may need to be changed. The default font can be selected through a control command or front panel button operation as described in the next section.

### Front Panel Configuration

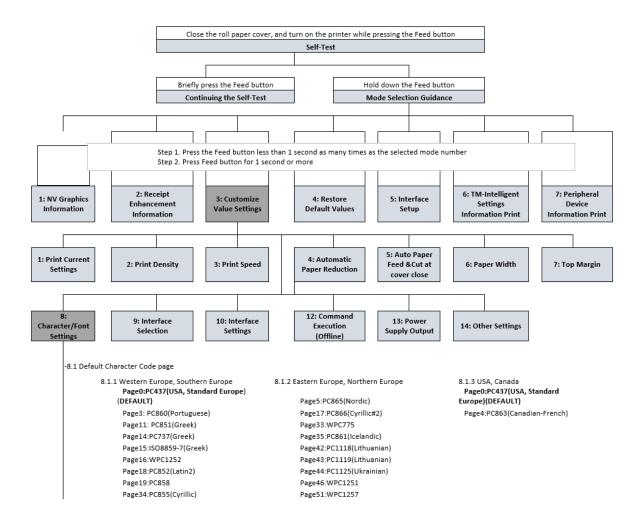
TM-T88VI printer provides a software setting mode through panel button operations. Refer to *TM-T88VI Technical Reference Guide* for the complete list of the software settings available in this mode. The Oracle TM-T88VI provides additional operations for configuring the default Epson printer native fonts.

# Changing the Default Epson Native Font

- 1. Hold the **Feed** button while powering up the printer. This will print the self-test sheet.
- Press and hold the Feed button until the next sheet is printed.
  - a. Follow the instructions at bottom of the sheet, to select "3. Customize Value Settings".
  - b. Follow the instructions at bottom of the sheet, to select "8. Character/Font Settings".
  - c. Select "5. Multi-Language Font"
  - d. Choose the default font from this list.
  - e. Cycle power to the printer.



The following menu tree overview shows the top level branches and associated mode settings and all language possibilities. The **(DEFAULT)** label indicates a factory default setting.



(diagram continued on next page)

Page38:PC869(Greek) Page39:ISO8859-2(Latin2) Page40:ISO8859-15(Latin9) Page45:WPC1250 Page47:WPC1253 8.1.4 Asia 8.1.5 Turkey, Arabia, Israel 8.1.6 Others Page12:PC853(Turkish) Page2:PC850(Multilingual) Page1:Katakana Page20:KU42 Page13:PC857(Turkish) Page21:TIS11(Thai) Page:32:PC720 Page26:TIS18(Thai) Page36:PC862(Hebrew) Page30:TCVN-3(Vietnamese) Page37:PC864(Arabic) Page31:TCVN-3(Vietnamese) Page41:PC1098(Farsi) Page52:WPC1258 Page48:WPC1254 Page53:KZ-1048(Kazakhstan) Page49:WPC1255 Page50:WPC1256 -8.2 Default International Character Set 8.2.2 Asia, Arabia 8.2.1 The Americas, Europe USA(DEFAULT) Japan Korean China Germany Britain Vietnam Denmark I Arabia Sweden Italy Spain Norway Denmark II Spain II Latin America Slovenia/Croatia -8.3 Embedded Font Replacement 8.3.1 Font A Replacement 8.3.2 Font B Replacement Font A(No Replacement)(DEFAULT) Font A Font B(No Replacement)(DEFAULT) Font B Special Font A Special Font A Special Font B Special Font B -8.4 Thai Character Composition 3 Pass 1 Pass(DEFAULT) -8.5 Multi Language Font (2-byte, Epson native Asian fonts, not Unicode Agfa Fonts) Thai , Vietnam(DEFAULT) Simplified Chinese Japanese

Korean Traditional Chinese

# UB-IDN02 Specifications (IDN model only)



Communication Standard	RS-485
Data transmission	Serial
Synchronization	Asynchronous
Handshaking	XON/XOFF, or using IDN status requests
Baud rate settings	9600, 19200, or 38400 bps
Data word length	8 bits
Parity Setting	None
Stop bits	2
Cable interface connector	Two RJ-12 female connectors
Interface Board dimensions	70 x 40 mm (2.76 x 1.57")
Operating temperature	5 to 50°C (41 to 122°F)
Humidity	10 to 90% RH (non-condensing)
Storage temperature	-10 to 50°C (14 to 122°F)
Compatibility	

# **Switches and Indicators**

Seven DIP switches are provided to configure the IDN interface. The DIP Switches perform the following functions:

Switch Number	Function	OFF	ON	
1				
2	IDN Device ID	See IDN Device ID Table Below		
3	IDIN Device ID			
4				
5	Baud Rate Selection	See Baud	Rate Table	
6	Daud Nate Selection	Below		
7	Operating mode	Normal	Self-Test	

# **IDN Device ID Table**

Device	Dip Switch				
ID	1	2	3	4	
USB- IDN**	-	-	-	-1	
01	-	-	-	ON•	
02	-	-	ON	-	
03	-	-	ON	ON	
04	-	ON	-	-	
05	-	ON	-	ON	
06	1	ON	ON	1	
07	-	ON	ON	ON	

Device	Dip Switch			
ID	1	2	3	4
08	ON	-	-	-
09	ON	-	-	ON
10	ON	-	ON	-
11	ON	-	ON	ON
12	ON	ON	-	-
13	ON	ON	1	ON
14	ON	ON	ON	-
15	ON	ON	ON	ON

# **Baud Rate Table**

Baud	DIP Switch	
Rate	5	6
9600	OFF	OFF
19200	ON	OFF
38400	OFF	ON

### NOTE:

The default DIP switches are set to device ID = 1, baud rate = 38400 bps. DIP switch 4 and 6 ON, others OFF.

\*\*ID = 0 is required to be set to support daisy chain printing in the new USB-IDN operational mode.

If there is a need to load new firmware into the UB-IDN control board, the board must be placed into re-flash mode. This mode is selected by turning off the printer, placing the DIP switches in the following state, then applying power to the printer.

### **IDN Re-flash mode DIP Switch Settings**

Switch	1	2	3	4	5	6	7
Setting	OFF	OFF	OFF	OFF	ON	ON	ON

## **IDN** Annunciator

An annunciator can sound on paper cut command mode flag. Default flag state is set to OFF (buzzer is silent on paper cut)

DIP switches are read only once when power is applied. Any changes made to the switch settings while the power is on will be ignored. If the annunciator is currently OFF and you desire to turn it on, place the IDN switches in annunciator mode as shown in the table below and cycle power to the printer to toggle the setting to ON.

# Annunciator Mode Toggle DIP Switch Setting

Switch No	1	2	3	4	5	6	7
State	ON	ON	ON	OFF	ON	ON	ON

Once you have achieved the desired setting, place the switches in runtime mode by setting the desired IDN device ID, baud rate and SW7=OFF, then cycle power to the printer in order to lock in the new setting.

The default DIP switches are set to device ID = 1, baud rate = 38400 bps. In other words, DIP switch 4 and 6 ON, others OFF.

### *✓***IMPORTANT**

### Use of ethernet port with IDN card installed:

To use the built-in ethernet port on TM-T88VI, perform one of the following steps:

- 1. Change the DIP switches on the IDN board to place the IDN board into the re-flash mode, or
- 2. Remove IDN board from the printer.

## **IDN LED Indicator**

An LED is provided on the card edge to indicate operating status. The LED will indicate the following operating or error conditions:

Error	Description	ERROR LED Blinking Pattern
None	Normal operation (no error).	Continuous blink (120ms on, 120ms off)
Incompatible printer	IDN interface is installed into an incompatible printer.	(160ms on, 160ms off for 2 blinks, then 1.5 sec on)
Printer fault	The printer is not responding to the IDN interface.	(160ms on, 160ms off for 3 blinks, then 1.2 sec on)
RAM read/write error	RAM memory test failed.	(160ms on, 160ms off, then 2 sec on)
CPU execution error	The CPU executes an invalid instruction or address.	(160ms on, 160ms off for four blinks, then 1 sec on)

## **IDN Protocol Standard**

Except as noted herein, the IDN protocol implemented for this printer conforms to the original specification issued April, 2000. Modifications have been made to allow support for multi-byte Unicode characters.

The revised protocol, has been designed to allow a hybrid mix of standard, non-multilingual IDN interfaces and multilingual IDN interfaces to be daisy-chained simultaneously on the same IDN network. For correct operation, however, multilingual characters must not be sent to a non-multilingual interface. Doing so will result in invalid characters being printed.

# **IDN Self-Test**

The IDN interface provides a self-test operation which checks the operation of the hardware, and reports current operating parameters, including the installed Unicode fonts.

To start the self-test, turn the printer off, turn on switch 7 on the UB-IDN interface, then turn the printer on. The firmware revision printed at the top of the self-test consists of a letter followed by three digits, in the format "A4.52". The letter represents the boot block revision, while the three digits are the UB-IDN control firmware revision.



### Figure 3-1 - IDN Self-Test Example

```
MICROS TM-T88VI
UB-IDN
                       2023.04.11
Version: A4.73
Multilingual Font(s) in Printer
                    ID VER TYP
   C/P map (Arabic) Amap 0.10
                    U24 0.81 THF
   Unicode_24
   Uni_Japanese24 U24J 0.81 THF
Uni_TradChin24 U24T 0.81 THF
                     Vmap 0.10
   Codepage Map
 ML Font Memory
Available in KByte: 2885
   Used in KByte:
                         4283
 USA CHARACTER SET
!"#$X&'()*+,-./0123456789:;<=>?
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
abcdefghijklmnopqrstuvwxyZ{\}}
 ÇüéaäaaçêëèïîìÄA£æRôöòûùÿÖÜ¢£¥ħf
 ARABIC CHARACTER SET
 ا ﴿ يُكُلُّ لَا لَأَنْ هُمِي مِهِ مَنْ " أَمْمَ عَعْ هُمْ يِدِي وَ هُنْ مُلَّكُ فَقَدْ أَ
  CONFIGURATION
    Cutter:
                 Full Duplex RS485
    Interface:
                  Xon/Xoff
    Baud Rate:
                  9600 bps
    Annunciator: OFF
    Mixed width: ON
    Arabization: ON
    Indic Digits:OFF
    Device Type: 02 (Roll Paper)
    Device ID: 00
Daisy Chain: Enabled
    DIP Switch Settings:
          1 2 3 4 5 6 7
      ΠN
      OFF | | | | | |
  Printer interface: Async.
  Loop Back With Test Plug: Fail
   RAM Test: Pass
  ROM Check Sum = 52AA: Pass
  Internal baud rate: 9600 bps
  ALL TESTS FINISHED
   PLEASE REMEMBER
          POWER OFF
     AND
RESET SWITCH 7
```



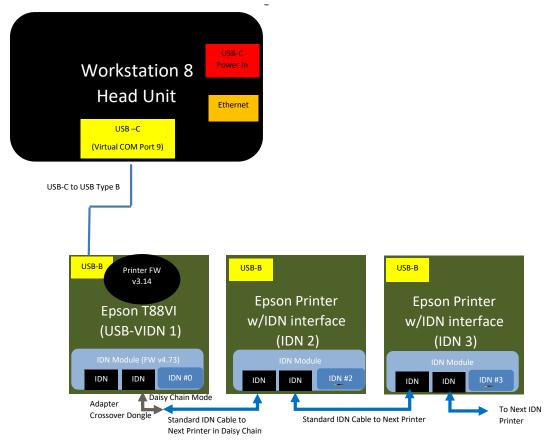
# **USB-IDN** Communication

Starting with printer firmware v3.14 and Simphony 19.5 you can connect the TM-T88VI printer to an Oracle MICROS Workstation 8 using a USB cable. This can be accomplished using a standard USB-A to USB-B cable or a USB-C to USB-B cable. An available USB port is all that is required at the workstation. Future updates will be provided to support this functionality with the Workstation 6 Series and Compact Workstation 3 Series

#### How it works and features:

- Requirements: TM-T88VI Printer Firmware v3.14 or greater, Simphony 19.5 or greater
- The TM-T88VI USB port is configured as CDC-ACM, which creates a virtual serial connection over the USB interface. The firmware v3.14 accepts IDN commands over this virtual serial connection.
  - T88VI printers will ship with CDC-ACM enabled by default. For existing printers, if USB IDN is needed, the printer must be manually configured for CDC-ACM (and printer firmware must be updated.)
  - Installation of firmware update alone will not reconfigure printer for CDC-ACM
  - Steps to update firmware can be found in My Oracle Support (MOS) under patch # 35449208 for the printer, and patch # 35468203 for the IDN interface board, also known as UB-IDN02.
- The Workstation 8 recognizes the USB connected TM-T88VI with firmware v3.14 and automatically assigns it to Com 9
  - Any available USB port on the Workstation 820 System Unit or Peripheral Expansion Module can be used to connect the USB-IDN TM-T88VI
- Within Simphony, configure an IDN printer on Com 9 as IDN ID 1
- If the UBS-IDN connected TM-T88VI has a traditional IDN module installed, it can support traditional IDN daisy chain printing. The USB-IDN connected printer must have an IDN module with v4.74 firmware. Downstream printers can be any legacy printer with an IDN interface (see Connection Diagram.)
  - The IDN module of the USB-IDN printer must be set to IDN ID 0 to enable Daisy Chain Support in order to connect additional downstream printers using IDN.
  - Special crossover adapter dongle is required to connect to the first downstream printer using traditional IDN over a standard IDN cable.
  - All existing features continue to function as highlighted in this document.

# **Workstation 8 Connection Diagram**



#### **T88VI Connected Via Virtual IDN**

- T88VI supports UIB IDN Module, so Daisy Chain is possible – <u>all IDN</u> <u>modules in daisy chain must be set to</u> <u>the same Baud rate</u>
- IDN module IDN ID must be set to <u>0</u> to enable daisy chain support
- Uses default virtual IDN #1 and configured as IDN ID #1 in Simphony EMC
- Have Printer Class set to CDC-ACM for virtual COM port 9
- T88VI supports ML printing
- Print speed is faster than traditional IDN
- All standard reporting (door open/paper out) supported
- Transparent mode supported

### Initial Printer in Daisy Chain (IDN2)

- Requires adapter crossover dongle to connect to the first upstream printer.
- All IDN modules in daisy chain must be set to the same Baud rate
- Can be any Epson printer that supports an IDN interface module
- Can support ML printing if printer model supports it
- Print speed is same as traditional IDN
- All standard reporting (door open/paper out) supported
- Transparent mode supported

### Subsequent Printers in Daisy Chain

- Standard IDN cable connects to previous printer
- all IDN modules in daisy chain must be set to the same Baud rate
- Can be any Epson printer that supports an IDN interface module
- Can support ML printing if printer model supports it
- Print speed is same as traditional IDN
- All standard reporting (door open/paper out) supported
- Transparent mode supported

## Virtual IDN Daisy Chain Connection

Daisy chain functionality is available with virtual IDN as shown in the illustration above. The USB connected TM-T88VI must have a UB-IDN02 interface module with firmware version 4.73 installed and this module must be configured as IDN 0.

A crossover adapter dongle is needed to connect this module to a standard IDN cable which is then connected to the first daisy chained printer. Subsequent daisy chained IDN printers can be connected via a regular IDN Cables.

### CDC-ACM

The TM-T88VI USB interface must be configured as a CDC-ACM class to create a virtual serial communication connection between the workstation and printer. TM-T88VI firmware version 3.14 allows the printer to recognize IDN commands sent over this virtual serial communication connection.

CDC-ACM class can be selected by an ESCPOS command, or by the printer panel operation as detailed below. This setting is enabled by default in printers factory loaded with F/W version 3.14.

### **Selecting CDC-ACM class using printer panel**

- Hold the feed button while powering up the printer. This will print the self test sheet.
- 2. Press and hold the feed button until the next sheet is printed.
- 3. Follow the instructions at bottom of the sheet, to select "3. Customize Value Settings".
- 4. Follow the instructions at bottom of the sheet, to select "10. Interface Settings".
- 5. Select "2. USB Interface Settings", then "1: Class"
- 6. Choose "3: CDC ACM Class".
- 7. Cycle power to the printer.

10. Interface Settings 10. Interface Settings 10.2.USB Interface Settings 10.2.1.Class Modes 0: Return to the previous menu Modes 1: Serial Interface Baud Rate 0: Return to the previous menu 2: USB Interface Settings ] 1: Vendor Class 3: Interface switch waiting time 2: Printer Class 4: Main connection interface \* 3: CDC ACM Class 5: Auto Line Feed 6: Output Paper-end Signals ] means default value. 7: Error Signal Output \* means current set value.

# **USB-IDN** Device ID

By default the Virtual IDN Device ID is set to 1 and should be left as is. If necessary, it can be changed using the printer panel:

- Hold the feed button while powering up the printer. This will print the self test sheet.
- 2. Press and hold the feed button until the next sheet is printed.
- 3. Follow the instructions at bottom of the sheet, to select "3. Customize Value Settings".
- 4. Follow the instructions at bottom of the sheet, to select "14. Other Settings".
- 5. Select "4. Virtual IDN", then 1 for "Device ID"



- 6. Choose the desired device ID from the list.
- 7. Cycle printer power.

```
14.Other Settings
Modes
  0: Return to the previous menu
  1: Printer Model
  2: Buzzer Control
  3: LED indicator when I/F starting
  4: Virtual IDN
14.Other Settings
 14.4.Virtual IDN
 14.4.1.Device ID
Modes
  0: Return to the previous menu
  1: Device ID 0
]*2: Device ID 1
  3: Device ID 2
  4: Device ID 3
  5: Device ID 4
  6: Device ID 5
  7: Device ID 6
  8: Device ID 7
  9: Device ID 8
  10: Device ID 9
  11: Device ID 10
  12: Device ID 11
  13: Device ID 12
  14: Device ID 13
  15: Device ID 14
  16: Device ID 15
1 means default value.
* means current set value.
```

# Multilingual Printing with Simphony and RES 3700

For information about multilingual printing in Simphony and Res 3700, refer to the following documentation:

- Oracle MICROS Simphony Configuration Guide, Release 19.2
- Oracle Hospitality RES 3700 Installation Guide, Release 5.7



# Windows Regional Language Setting for RES and OPOS

If you want to print in a language other than the default English, you must also change the regional language setting in Microsoft Windows. Also, if you are using OPOS in Simphony, you will need to change this regional language setting as well.

- 1. In Microsoft Windows, search for and open the **Region** settings.
- Select the Administrative tab.
- 3. Under the *Language for non-Unicode programs* panel, select a language for the printer. This should match the language selected in the OPOS settings.

