D1064

Customer Display

Operator Manual

01750364416 B





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1 Document History

Part Number	Date	Remarks
01750364416 A	02/2022	Creation of the manual
01750364416 B	04/2022	Addition of part numbers and smaller improvements

2 About This Manual

This documentation is intended to help you to work with the customer display and to serve as a reference work. The detailed table of contents helps you find the desired information quickly and easily.

9	NOTE
	Note
	This is how notes are displayed in this manual.



3 Introduction

The D1064 is a rejuvenate successor of the BA64-2 Customer Display for the A-Series Family of POS system. The radiant and high contrast nature of the VFD technology makes it an excellent choice for a customer display. The D1064 operates in either USB or RS232 mode depending on the cable option you select. There are three mounting options to choose from, for mounting on the back of the A-Series POS terminal, pole-mount or standalone on the counter top.

3.1 Features at a glance

- VFD version allow for worldwide application
- Backward compatible to BA63/BA64
- Epson ESC POS command set support
- Loadable character sets
- Unicode support
- JavaPOS 1.13 support
- Flexible mounting options

3.2 Care of D1064

Clean your customer display regularly with an appropriate surface cleaning product.

Make sure that the device is switched off and that no moisture is allowed to get into the inside of the device.

4 Manufacturer's Declaration and Approval

General authorization

CE

This device complies with the requirements of the directive 2014/30/EC with regard to "Electromagnetic Compatibility" and 2014/35/EC "Low Voltage Directive" and RoHS directive 2011/65/EU.

Therefore, you will find the CE mark on the device or packaging.

FCC-Class A Declaration

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 expense.

Modifications not authorized by the manufacturer may void users' authority to operate this device.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation.

CAN ICES-3 (A)/NMB-3 (A)

Safety information

This device conforms to the corresponding safety regulations for information technology devices, including electronic office machines for use in the office environment.

- If the device is moved from a cold environment to a warmer room where it is to be operated, condensation could occur. The device must be completely dry before being put into operation. Therefore an acclimatization time of at least two hours should be accounted for.
- Lay all cables and supply lines so that nobody can tread on them or trip over them.
- Data cables should neither be connected nor removed during electrical storms.
- This equipment is not suitable for use in locations where children are likely to be present.
- Protect the device from vibrations, dust, moisture and heat, and only transport the device in its original packaging (to protect it against impact and blows).
- Take care to ensure that no foreign objects (e.g. paper clips) or liquids can get into the inside of the device, as this could cause electrical shocks or short circuits.
- In case of emergencies (e.g. damaged housing, liquid or foreign objects getting into the device), the device should be switched off immediately, the mains plug of the BEETLE or PC should be removed, and the Diebold Nixdorf customer service should be contacted.

Generally you should connect IT-devices only to power supply systems with separately guided protective earth conductor (PE), known as TN-S networks. Do not use PEN conductors! Please also observe the recommendations of the norm DIN VDE 0100, part 540, Appendix C2, as well as EN50174-2, §5.4.3.

Warranty

Diebold Nixdorf guarantees generally a warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all those damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty.

For further information of the stipulation, look at your contract.

All parts of the product which are subject to wear and tear are not included in the warranty engagement.

Please order spare parts at the Diebold Nixdorf customer service.

Instructions for maintenance

Clean your display regularly with an appropriate surface cleaning product. Make sure that the device is switched off, connector cables are unplugged and that no moisture is allowed to get into the inside of the device.

Please observe the maintenance and cleaning instructions for each of the components. These instructions can be found in their respective chapters.

Recycling

Environmental protection does not begin when time comes to dispose of the display; it begins with the manufacturer. The compact display is manufactured without the use of CFCs and CCHS and is produced mainly from reusable components and materials.

The processed plastics can, for the most part, be recycled. Even the precious metals can be recovered, thus saving energy and costly raw materials. Please do not stick labels onto plastic case parts. This would help us to re-use components and material.

You can protect our environment by switching on your display only when it is actually needed. If possible, even avoid the stand-by-mode as this wastes energy, too. Also switch your display off when you take a longer break or finish your work.

There are still some parts that are not reusable. Diebold Nixdorf guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001 and ISO 14001.

So don't simply throw your device on the scrap heap when it has served its time, but take advantage of the environmentally smart, up-to-date recycling methods.

Please contact your competent branch or the Recycling Center Paderborn (for European countries) for information on how to return and re-use devices and disposable materials under the following mail address:

Email: info@Dieboldnixdorf.com

We look forward to your mail.

5 Supplier's Declaration of Conformity

Product Description: Customer Display Model: D1064

Party issuing Supplier's Declaration of Conformity

Diebold Nixdorf Singapore PTE. LTD. 30A Kallang Place, #04-01 Singapore 339213 Phone: +65 6747 3828

Responsible Party – U.S. Contact Information

Diebold Nixdorf 50 Executive Pkwy PO Box 2520 Hudson, OH 44236 / USA Phone: +1 330 490 5049

FCC Compliance Statement (for products subject to Part 15)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

6 Overview

Below you will find reference pictures showing the D1064 in various installation situations. The installation components, such as the pole itself, are not part of the scope of delivery of the D1064.



6.1 D1064 on a stand



Figure 6-1: D1064 mounted on a Stand

6.2 D1064 on a pole



Figure 6-2: D1064 mounted on a pole

6.3 D1064 on a A-Series AIO or Display



Figure 6-3: D1064 on a A-Series AIO or Display

7 Initial Setup

In this chapter you will find the information you need to prepare for the installation of the system.

7.1 Unpacking and Checking the Delivery Unit

Unpack the parts and check whether the delivery corresponds to the information on the delivery note. The delivery includes the respective screen module.

Mounting adapters can be ordered separately depending on the intended installation situation. Data cables required for operation can be ordered separately. If damage has occurred during transport or the contents of the package do not match the delivery note, inform your Diebold Nixdorf sales office immediately.

Only transport the unit in its original packaging.

7.2 Mounting Options and Connection Cables

Various mounting options and connection cables are available for installing the BA64 in the different installation scenarios.

The mounting options and cables must be purchased separately from the main unit.

The following list shows an overview of the D1064 configuration components and their detailed contents.

D1064 consists of:

Illustration	Item
	1x D1064 Display
	4x Torx screw M4x6 with black zinc

Stand consist of:

Illustration	Part Number	Item
	01750279877	1x Stand Assembly

Pole Adapter consists of:

Illustration	Part Number	Item
	01750279878	1x Pole mount assembly

A-Series dual display adapter consists of:

Illustration	Part Number	Item
	01750342563	1x Display adapter
		2x Torx countersunk screws M4x8 (Part number: 01750335349)

Connection cables:

Illustration	Part Number	Item
	01750243981	USB to RJ45 cable, 1.5m, black
	01750243983	USB to RJ45 cable, 3.0m, black
	01750243985	USB to RJ45 cable, 5.0m, black
	01750349276	RJ45 to USB cable (0,42.)
	01750243975	RS232 to RJ45 cable, 1.5m, black
	01750243977	RS232 to RJ45 cable, 3.0m, black
	01750243979	RS232 to RJ45 cable, 5.0m, black

7.3 Installing the D1064 Display

7.3.1 Installing System to the Stand

To install the D1064 Display to a pole you will need the following parts:

Illustration	Item
	1x Unit of D1064 Display
	1x Unit of Stand
	1x Unit of connection cable



Figure 7-1: Threading the cable through the stand



Figure 7-2: Connect the RJ45 cable

1. Thread the RJ45-end of the connection cable through the stand.

2. Connect the RJ45 connector (1) to the D1064



Figure 7-3: Secure the RJ45 cable



Figure 7-4: Secure the Display to the stand

3. Secure the cable in the strain relief (1) at the back of the D1064.

4. Secure the D1064 with two ,Torx screw M4x6['] (1) to the stand.



5. Secure the cable in the strain relief (1) at the base of the stand.

Figure 7-5: Secure cable in the stand



Figure 7-6: Finished installation

• Display D1064 mounted on a stand.

7.3.2 Installing System to the Pole

To install the D1064 Display to a pole you will need the following parts:

Illustration	Item
	1x Unit of D1064 Display
	1x Unit of Pole mount adapter
	1x Unit of connection cable

Initial Setup



- 1. Thread the RJ45-end of the connection cable through the pole and the pole adapter.
- 2. Slide the pole mount adapter onto the pole.

Figure 7-7: Mount adapter to pole



Figure 7-8: Connect the cable

3. Connect the RJ45 connector (1) the the D1064.



Figure 7-9: Attach cable to strain relief



Figure 7-10: Mount the Display to the adapter

4. Secure the cable in the strain relief (1) at the back of the D1064.

 Secure the D1064 with two ,Torx Screws M4x6' (1) to the adapter.



Figure 7-11: Secure adapter on the pole



Figure 7-12: Finished installation

- 6. Locate the screw hole on the pole.
- 7. Use a M3 screw to secure the D1064 and pole mount adapter assembly to the pole.

• Display D1064 mounted on a pole.

7.3.3 Installing System to a A-Series AIO or Display

To install the D1064 Display to a A-Series AIO or Display you will need the following parts:





Figure 7-13: Remove the VESA cover



Figure 7-14: Remove the breakaway

1. Pull the VESA cover downwards from the stand (1).

2. Remove the breakaway (1) from the VESA cover.



3. Remove the cable cover (1) from the Beetle A-series system.

Figure 7-15: Removing the cable cover



Figure 7-16: Loosen adapter screws

- 4. Loosen the M3x8 screws (2) slighty.
- 5. Remove the mounting adapter (1).



Figure 7-17: Threading the RJ45 cable



Figure 7-18: Removing screws from the D1064

- 6. Position the RJ45 connector (2) with the lock clip side parallel to the adapter sides.
- 7. Thread the RJ45 connector through the adapter (1).

8. Remove the M4x6 torx screws (1) from the D1064.



Figure 7-19: Connecting the RJ45 plug



Figure 7-20: Mounting the adapter to D1064

- 9. Connect the RJ45 connector (1) the the D1064 display.
- 10. Secure the cable in the strain relief (2) at the back of the display.

11. Insert the mounting adapter (2) and secure it with the previously removed screws (1).



Figure 7-21: Removing top screws



Figure 7-22: Mounting the adapter to the stand

12. Remove two M4x8 countersunk torx screws(1) at the top.

- 13. Insert the mounting adapter (1) as directed by the arrow.
- 14. Secure the mounting adapter with the previously removed screws (2).



Figure 7-23: Mount the Display to the adapter



Figure 7-24: Threading the USB cable

- 15. Slot in the D1064 assembly (1) to the mounting adapter.
- 16. Tighten the previously loosened M3x8 torx screws (2).

17. Thread the USB cable trough the gap between the Beetle and the marked beam.



18. Connect the USB cable to an available USB port (1).

Figure 7-25: Connect the cable



Figure 7-26: Mounting the cable cover

19. Attach the cable cover (1) to the Beetle A-series system.



Figure 7-27: Cable routing overview

- 20. Push the cable into the cable channel from the mounting adapter.
- 21. Bend the cable in a 90° angle (1).
- 22. Bend the cable at (2) and (3).
- 23. Lay the cable into the cable channel (4).



TD-01596-30



24. Push the VESA cover upwards to mount it to the stand (1).

Figure 7-28: Mount the VESA cover



Figure 7-29: Finished installation

 Display D1064 mounted on a A-Series AIO or Display

8 Display Characteristics

8.1 Screen Coordinates

The D1064 is a text display of 2 rows by 20 characters.

Each character has a resolution of 5 pixels width and 7 pixels height.

	TD-01596-32
	D
<u>En</u>	

The origin of the coordinate system is at the top-left corner of the screen as shown above.

9 Display Commands

9.1 Control Characters and ESC Sequences

The table below is a summary of the control characters and escape sequences supported by the D1064.

Command	Description
BS	Backspace
LF	Line Feed
CR	Carriage Return
ESC [0 K	Delete to End of Line
ESC [2 J	Clear Screen
ESC [<y> ; <x> H</x></y>	Set Cursor Position
ESC R <n></n>	Set Country Code
ESC [0 c	Call Display Identification
ESC [1 c	Character Set Identification
ESC [2 c	Firmware Identification
ESC [<n> ; <m> S</m></n>	Set Baud Rate for Serial Interface
ESC [<n> E</n>	Set Display Mode
ESC [E	Read Current Display Mode
ESC [<n> u</n>	Set Character Encoding/Decoding Mode
ESC [u	Read Character Encoding/Decoding Mode
ESC [0 ?	Execute Self-Test

9.1.1 Backspace

Code	Hexadecimal
BS	08

Description:

This command moves the cursor one position to the left. If there is a character in the position to which the cursor moves, the character is not deleted. This command is ignored if the cursor is already at the first position of the row.

9.1.2 Line Feed

Code	Hexadecimal
LF	0A

Description:

This command moves the cursor one row down; the column position of the cursor remains unchanged. If the cursor is on the last row the screen scrolls up a row and the position of the cursor remains unchanged.

9.1.3 Carriage Return

Code	Hexadecimal
CR	0D

Description:

This command moves the cursor to the beginning of the row in which it is currently positioned. This command is ignored if the cursor is already at the beginning of the row.

9.1.4 Delete to End of Line

Code	Hexadecimal
ESC[0K	1B 5B 30 4B

Description:

This command deletes the characters from the cursor, including the cursor position to the end of the row. The position of the cursor remains unchanged.

9.1.5 Clear Screen

Code	Hexadecimal
ESC [2 J	1B 5B 32 4A

Description:

This command clears all content on the screen. The cursor position remains unchanged.

9.1.6 Set Cursor Position

Code	Hexadecimal
ESC [< <i>y</i> > ; <x> H</x>	1B 5B < <i>y</i> > 3B < <i>x</i> > 48

Description:

This command positions the cursor to the specified basic cell position. The cursor is not visible. Parameter $\langle y \rangle$ and $\langle x \rangle$ are 1 and 2 ASCII decimal numbers respectively. If $\langle y \rangle$ or $\langle x \rangle$ is 0, it is interpreted as 1, and if they are greater than the maximum column or row it is interpreted as the maximum. If $\langle y \rangle$, $\langle x \rangle$ and the ';' in between are dropped, the cursor is positioned at the home position, i.e. coordinate (1,1).

Notes:

- 1. Default position of cursor is (1,1).
- 2. Valid ranges of value are 1 to 2 for $\langle y \rangle$ and 1 to 20 for $\langle x \rangle$.

9.1.7 Set Country Code

Code	Hexadecimal
ESC R <n></n>	1B 52 <i><n></n></i>

<*n*> is a hexadecimal byte value that represents the country code. The supported country codes are listed below:

Country Code	Code Page	Character Set	Country Code	Code Page	Character Set
00	-	USA	36	737	Latin / Greek 2
01	-	France	37	862	Latin / Hebrew
02	-	Germany	38	IBM831	Latin / Greek 2
03	-	Great Britain	39	775	Baltic Rim
04	-	Denmark 1	3A	855	Cyrillic
05	-	Sweden	3B	860	Portugese
06	-	Italy	3C	861	Icelandic
07	-	Spain	3E	863	French / Canada
08	-	Japan	40	865	Nordic
09	-	Norway	41	869	Greek 2
0A	-	Denmark 2	42	1250	Latin 2 / Central Europe
0B	-	Spain 2	44	1251	Cyrillic / Slavic
0C	-	Latin America	45	1252	Latin 1 / ANSI
30	437	Standard	46	1253	Greek
31	850	Latin 1	47	1254	Latin 5 / Turkish
32	852	Latin 2	48	1255	Hebrew
33	857	Latin 5 / Turkey	49	1257	Baltic Rim
34	858	Latin 1	4A	1258	Vietnamese
35	866	Latin / Cyrillic	63	897	Japan / Katakana

Description:

This command set the specific character set for the respective country code defined by parameter $\langle n \rangle$ as shown above.

Notes:

- 1. The default is the USA character set (n = 00).
- 2. This command is not supported in UTF-8 and UTF-16 mode.

9.1.8 Display Identification

Code	Hexadecimal
ESC [0 c	1B 5B 30 63

Description:

This command returns the display characteristics.

Response:

Code	Hexadecimal
ESC [? <p1>; <p2>;<p3>;<p4>;<p5> c</p5></p4></p3></p2></p1>	1B 5B 3F <p1> 3B <p2> 3B <p3> 3B <p4> 3B <p5> 63</p5></p4></p3></p2></p1>

where:

		D1064	
<p1></p1>	Type of display	2 = VFD	
<p2></p2>	Firmware version	One ore more ASCII coded decimal number	
<p3></p3>	Character set	Two ASCII coded alphanumeric character of the currently selected country code. If country code is not defined for the current codepage <p3> shall be empty.</p3>	
<p4></p4>	Number of rows	2	
<p5></p5>	Column / Line	20	

Notes:

1. This command is not supported in USB mode.

9.1.9 Character Set Identification

Code	Hexadecimal
ESC [1 c	1B 5B 31 63

Description:

This command returns the country codes of the external character sets currently installed.

Response:

Code	Hexadecimal	
ESC [? <cp1>;<cc1>;<cp2>;<cc2>; [] ;<cp<i>n>;<cc<i>n> c</cc<i></cp<i></cc2></cp2></cc1></cp1>	1B 5B 3F <cp1> 3B <cc1> 3B [] 3B <cp<i>n> 3B <cc<i>n> 63</cc<i></cp<i></cc1></cp1>	

where:

cp1, *cp2*, ... and *cc1*, *cc2*, ... are the code pages and country codes respectively.

Notes:

1. This command is not supported in USB mode.

9.1.10 Firmware Identification

Code	Hexadecimal
ESC [2 c	1B 5B 32 63

Description:

This command returns the boot and main firmware version numbers.

Response:

Code	Hexadecimal	
ESC [? <p1> <p2>;<p3> <p4> c</p4></p3></p2></p1>	1B 5B 3F <p1> <p2> 3B <p3> <p4> 63</p4></p3></p2></p1>	

where:

- p1 and p2 are the boot firmware version and subversion number
- p3 and p4 are the main firmware version and subversion number.

Notes:

1. This command is not supported in USB mode.

9.1.11 Set Compatibility Mode

Code	Hexadecimal
ESC [< <i>n</i> > E	1B 5B < <i>n</i> > 45

n is a ASCII coded decimal number defined as follow:

n	Display Mode
1	Set BA64 Native Mode (default)
2	Set ESC/POS Mode
3	Set BA63 Emulation Mode

Description:

This command is to switch to the selected compatible mode. Sending this command will change the setting and save to flash (non-volatile).

Notes:

1. When set to mode 3, the encoding mode is automatically restored to ASCII mode.

9.1.12 Read Current Compatibility Mode

Code	Hexadecimal
ESC [E	1B 5B 45

Description:

This command returns the current compatibility mode. The response format is as shown below.

Response:

Code	Hexadecimal
ESC [< <i>n</i> > E	1B 5B < <i>n</i> > 45

n is a ASCII coded decimal number:

n	Display Mode
1	BA64 Native Mode
2	ESC/POS Mode
3	BA63 Emulation Mode

Notes:

1. This command is not supported in USB mode.

9.1.13 Set Baud Rate for Serial Port

Code	Hexadecimal
ESC [<n> ; <m> S</m></n>	1B 5B < <i>n</i> > 3B < <i>m</i> > 53

Description:

This command defines the baud rate and the control byte for the serial port.

n	Baud rate	m	Control Byte
01	110 bps	0 – 1	11 = 8-Bit Data (fixed)
02	300 bps	2	0 = 1 stop bit (default)
03	600 bps		1 = 2 top bits
04	1200 bps	3	0 = Disable parity
05	2400 bps		1 = Enable parity (default)
06	4800 bps	4 – 5	00 = Odd parity (default)
07	9600 bps		01 = Even parity
08	14400 bps		10 = Forced '1' stick parity
09	19200 bps		11 = Forced '0' stick parity
0A	38400 bps	6 – 7	Fixed at 00
0B	56000 bps		
0C	57600 bps		
0D	115200 bps		

Note:

- 1. This command is applicable only to the RS232C interface.
- 2. This command is not applicable in Unicode mode, use the alternate command instead, see *Section 9.1.14*.

9.1.14 Set Serial Port

Code	Hexadecimal
ESC [< <i>b</i> >;< <i>d</i> >;< <i>p</i> >;< <i>s</i> > s	1B 5B 3B <d> 3B 3B <s> 73</s></d>

Description:

This is an alternate command to set the serial communication settings. The parameters are ASCII coded decimal values or alphabetical character:

Param	eter	Values
b	Baud rate	9600 to 115200
d	Data length	7 or 8
р	Parity	0 = none
		1 = odd
		2 = even
s	Stop bit	1 or 2

Notes:

1. This command is not applicable in USB mode.

9.1.15 Set Character Encode/Decode Mode

Code	Hexadecimal
ESC [< <i>n</i> > u	1B 5B < <i>n</i> > 75

n is a ASCII coded decimal number defined as follow:

n	Display Mode
0	Set ASCII Encode/Decode mode
1	Set UTF-8 Encode/Decode mode
2	Set UTF-16 Encode/Decode mode

Description:

An encode/decode mode change resets the display.

9.1.16 Read Character Encode/Decode Mode

Code	Hexadecimal
ESC [u	1B 5B 75

Description:

This command returns the current compatibility mode. The response format is as shown below.

Response:

Code	Hexadecimal
ESC [< <i>n</i> > u	1B 5B < <i>n</i> > 75

n is a ASCII coded decimal number.

n	Display Mode
0	ASCII Encode/Decode mode
1	UTF-8 Encode/Decode mode
2	UTF-16 Encode/Decode mode

Notes:

1. This command is not supported in USB mode.

9.1.17 Start Self-Test

Code	Hexadecimal
ESC [0 ?	1B 5B 30 3F

Description:

This command starts a self-test in an endless loop. The self-test stops and returns to normal operation when the device received any data.

9.1.18 Restore Configuration Data to Factory Default

Code	Hexadecimal
ESC + 0 w	1B 2B 30 77

Description:

This command restores all settings to the factory default configuration.

9.2 ESC / POS Commands

The D1064 supports a reduced EPSON command set of ESC/POS commands.

Please refer to EPSON Application Programming Guide for a detailed description of the commands.

9.2.1 Supported Commands

The table below lists the supported commands.

Command	Description	Hexadecimal	
BS	Backspace	08	
HT	Horizontal Tab	09	
LF	Move cursor down	0A	
US LF	Move cursor up	1F 0A	
НОМ	Move cursor to home position	0B	
CR	Move cursor to left-most position	0D	
US CR Move cursor to right-most position 1F 0D		1F 0D	
US B	Move cursor to bottom position 1F 42		
US \$	Move cursor to the specified position1F 24 < n > < n		
CLR	Clear display screen 0C		
CAN	Clear cursor line 18		
ESC @	C @ Initialize display 1B 40		
ESC R	C RSelect an international character set1B 52 < n>		
ESC t	C tSelect character code table1B 74 <n></n>		
US MD1	Selecht override mode 1F 01		
US MD2	Select vertical scroll mode 1F 02		
US MD3	Select horizontal scroll mode 1F 03		

9.2.2 Unsupported Commands

The following table lists the commands which are not supported by D1064. These unsupported commands are parsed and discarded.

Command	Description	Hexadecimal	
ESC =	Select peripheral device	1B 3D < <i>n</i> >	
ESC %	Select/Cancel user-defined character set	1B 25 < <i>n</i> >	
ESC &	Define user-defined characters	1B 26 < <i>y</i> > <c1> <c2></c2></c1>	
ESC ?	Cancel user-defined characters	1B 3F < <i>n</i> >	
ESC W	Set/Cancel window range	1B 57 < <i>n</i> > < <i>m</i> > < <i>x</i> 1> < <i>y</i> 1> < <i>x</i> 2> < <i>y</i> 2>	
US C Turn cursor display on/off 1F 4		1F 43	
US E Turn display screen blank interval		1F 45 < <i>n</i> >	
US T	Set and display counter time	1F 54 <i><n> <m></m></n></i>	
US U	Display counter time	1F 55	
US X	Set brightness	1F 58 < <i>n</i> >	
US r	Select/Cancel reverse characters	1F 72 < <i>n</i> >	
US v	Set status confirmation for DTR signal	1F 76 < <i>n</i> >	
US @	Execute self-test	1F 40	
US :	Stat/End macro definition	1F 3A	
US ^	Execute macro	1F 5E < <i>n></i> < <i>m></i>	
US (A	Select display	1F 28 41	
US (E	Select window control	1F 28 45	

9.2.3 USB Commands

This chapter describes the USB command format and the commands that the D1064 supports.

9.2.3.1 Command Format

Command:

Byte #	Name	Number of bytes	Description
1	Command byte 1	1	First command byte
2	Command byte 2	1	Second command byte
3 to <i>n</i>	Data / Pad bytes		Daty bytes

Response:

Byte #	Name	Number of bytes	Description
1	Response length	1	Total number of bytes including byte 1
2	Status byte 1	1	Byte 1 of 3-byte status
3	Status byte 2	1	Byte 2 of 3-byte status
4	Statuse byte 3	1	Byte 3 of 3-byte status
5 to <i>n</i>	Data / Pad bytes		Data bytes

9.2.3.2 Write Data

Command:	02h, 00h <data count="">, <data></data></data>		
	Data Count:	1-Byte value representing bytes count of the following data (w/o data count byte).	
	Data	Control characters, ESC sequence and displayable characters encoded in the current encoding mode.	
Response	04h, <status 1="" byte="">, <status 2="" byte="">, Status byte 3></status></status>		

Description:

This command displays either the Escape sequences, control characters or the displayable characters encoded in the current encoding mode. 'Data' can be broken up and send in several frames. Maximum report length is 32 bytes.

9.2.3.3 Request Status

Command	00h, 20h
Response	04h, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte=""></status></status></status>

Description:

This command returns its status to the display.

9.2.3.4 Reset

Command	00h, 40h
Response	none

Description:

This command causes a software reset of the device.

9.2.3.5 Read Display Identification

Command	21h, 00h		
Response	<count>, < <pn4> ; <</pn4></count>	<status 1="" byte="">, <status 2="" byte="">, <status 3="" byte="">, <pn1> ; <pn2> ; <pn3> ; Pn5> ; <pn6> ; <pn7></pn7></pn6></pn3></pn2></pn1></status></status></status>	
	count	1-Byte value representing bytes count of the following data (w/o 'count' byte)	
	Pn1	Type of display	
	Pn2	Current code page	
	Pn3	Country code	
	Pn4	Number of lines	
	Pn5	Columns per line	
	Pn6	Code page loaded in space page	
	Pn7	Serialnumber	

Pn1 to Pn7 are string encoded in the current encoding mode, either in ASCII, UTF-8 or UTF-16.

Description:

This command is used to get display identification from the device.

9.2.3.6 Read Character Set Identification

Command	21h, 01h	
Response	<count>, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte="">, <cp1> ; <cc1> ; <cp2> ; <c- c2> ; [] ; <cp<i>n> ; <cc<i>n></cc<i></cp<i></c- </cp2></cc1></cp1></status></status></status></count>	
	count	1-Byte value representing bytes count of the following data (w/o 'count' byte)
	cp1	Codepage 1
cc1		Country code 1
	[]	[]
	cp <i>n</i>	Codepage n
	ccn	Country code <i>n</i>

cp1 - cp*n*: code page 1 to *n* are 4-digit string encoded in the current encoding mode.

cc1 - cc*n*: country code 1 to *n* are 2-digit string encoded in the current encoding mode.

Description:

This command returns the currently loaded codepages and the corresponding country codes.

9.2.3.7 Read Firmware Identification

Command	21h, 02h		
Response	<count>, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte="">, <bl version=""> ; <main version=""></main></bl></status></status></status></count>		
	count	1-Byte value representing bytes count of the following data (w/o 'count' byte)	
	BL-Version	Bootloader version – 2-byte value, BCD coded	
	Main version	Main Firmware version – 2-byte value, BCD coded	

Description:

This command returns the bootloader version and main firmware version.

9.2.3.8 Read Display Compatibility Mode

Command	21h, 03h		
Response	<count>, <status 1="" byte="">, <status 2="" byte="">, < status byte 3>, <mode></mode></status></status></count>		
count 1-Byte value representing bytes count of the following da		1-Byte value representing bytes count of the following data (w/o 'count' byte)	
	mode	Display compatibility mode; 1 numeric character	
		1 = BA63G or BA63	
		2 = ESC/POS	

Description:

This command returns the current compatibility mode setting.

9.2.3.9 Read Character Encode/Decode

Command	21h, 04h		
Response	<count>, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte="">, <mode></mode></status></status></status></count>		
	count 1-byte value representing bytes count of the following data (w/o 'cou		
	mode	Display encoding/decoding mode; 1 numeric character	
		0 = ASCII	
		1 = UTF-8	
		2 = UTF-16	

Description:

This command returns the current encoding/decoding mode.

9.2.3.10 Request Self-Test

Command	00h, 10h
Response	04h, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte=""></status></status></status>

Description:

This command starts a self-test of the display. The response will be sent at the end of the test.

9.2.3.11 Restore Factory Default

Command	FBh, 00h
Response	04h, <status 1="" byte="">, <status 2="" byte="">, <status 3="" byte=""></status></status></status>

Description:

This command resets the settings to the default factory settings.

9.2.4 Status Bytes Definitions

Status Byte	Bit	Error Message
1	0	Flash download in progress
	1 3	Error status
		000 – No error
		001 – Device received unexpected command
		010 – File ist not valid
		011 – Device is unable to read from memory
		100 – Device is unable to read from memory
		101 - Programm memory failed verification
		110 – Vendor-specific error
		111 – Unknown error
	4	Reserved (must be zero)
	5	Hardware error
	6	Command not executed
	7	Device not ready to receive command
2	0	Command complete
	1	Flash download is in progress
	2 4	Firmware upgrading status
	5	Next segment pending (1.)
	6	Operation Error
	7	Undefined command
3	0 7	Reserverd (all zero)

Notes:

1. Bit 5 of Status Byte 2 when set indicates that there is another *Segment* following this. A zero for this bit means that there is no subsequent segment. As the byte-count is a byte value, when the amount of data exceeds the 255 (0xFF) it has to be broken up into two or more *Segments*. A *Segment* is a block of data that starts with the byte-count and the 3 status bytes followed by the data. The Host software will have to combine the data from each segment to form a complete data transfer.

9.2.5 Middleware

User has the option of using Wincor's provided JavaPOS 1.13, VirtualCOM driver or directly programming the device.

The JavaPOS 1.13 is available for both Windows and Linux, the logical names are:

Device	Logical Name
D1064	DN_LineDisplay_D1064_COM
	DN_LineDisplay_D1064_USB

If the user prefers COM interface for ease of programming but the host system lacks a powered COM port, use the VirtualCOM driver to virtualize the D1064 with as USB interface as a COM device.

10 Technical Data

Model		D1064
Display Technology		Vacuum Florescent Display
Characteristics		2 rows x 20 characters
		Basic cell matrix: 5x7
		6.2 x 9.5 mm
Viewing angle	left/right	68/68 degree
	up/down	68/68 degree
Contrast (nominal	·	800:1
Character Resolution		SBCS: 5x7
Host Interface		USB2.0 & RS232
Character Coding		Supports ASCII, UTF-8 and UTF-16
Ratings	USB	5V +/- 5%, 0.5A
	RS232	12V +/- 10%, 0.3A
Data rate	USB	12Mbps
	RS232	Up to 115.2K, CTS/RTS flow control
Supported Codepages		Windows & MS-DOS code pages
Upgradeability		Firmware and code pages are upgradeable
Compability		Backwards compatible to BA63 and BA64-2
		Switchable to ESC/POS compatible mode
Middleware		JavaPOS 1.13/OPOS UDM
		VirtualCOM driver
Supported OS		Windows 10, Linux
Operating Enviroment		0°C to 40°C
		5% to 85% RH
Certifications		CE Class B and FCC Class A
Dimensions (WxHxD)		199.9 x 71.1 x 27.1 mm
Weight		235 g

10.1 Dimensions (mm)

D1064 Dimensions



D1064 Stand Dimensions



Pole Adapter Dimensions



D1064 A-Series AIO Adapter



Abbreviation Index

ASCII

American Standard Code for Information Interchange

CE

European conformity marking

CFC

Chlorofluorocarbon

СНС

Chlorinated hydrocarbon

COM

Communication port

CTS

Clear To send

DBCS

Double-Byte Character Set

FCC

Federal Communications Commission

ISO

International Organization for Standardization

OPOS

OLE (Object Linking and Embedding) for Retail POS

OS

Operating System

POS

Point Of Sales

RH

Relative Humidity

RTS

Request To Send

SBCS

Single-Byte Character Set

UDM

Universal Data Model

USB

Universal Serial Bus

UTF

Unicode Transformation Format

VESA

Video Electronics Standard Association

VFD

Vacuum Fluorescent Display

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