omniTron

READER
MAH 100

Power ○

Trig ●

Ok ●

Fail ●

Mode: 2

in | 1 | Portbeleg.
Port Sensortype

1 MAC330

TECHNICAL MANUAL

omniTron

Designation of this documentation:

Technical manual for the Reader MAH 100

Version of the described product:

1.0

Editorial version of this documentation:

09/02

TABLE OF CONTENTS

1 SPECIFICATIONS & INSTRUCTIONS

1.1 MAH 100 Specifications

Performance Working Range (Typical)	Data Matrix	Code 128
Size:	8,8 mil	4,2 mil
Near:	18,5 mm (0,7 inches)	18,3 mm (0,7 inches)
Far:	57,4 mm (2,3 inches)	52.20 mm (2,1 inches)
Size:	10 mil	5,8 mil
Near:	12,7 mm (0,5 inches)	12,7 mm (0,5 inches)
Far:	65,7 mm (2,6 inches)	64,4 mm (2,5 inches)
Rotational Sensitivity:	360 °	
Viewing Angle:	+/-45 °	
Ambient Light:	Total darkness to 100,000 lux (full sunlight)	
Aiming:	Circle or dot pattern provides user feedback	
2-Dimensional Symbologies:	DataMatrix	
Linear Bar Codes:	Code 39,Code 128,UPC,EAN,JAN	
Interface:	RS232,Keyboard Wedge,PC Card	
Programmable Options:	Baud Rate, Parity, Data Formatting, Code Options	

Mechanical Dimensions	
Length:	183 mm
Diameter:	29 mm
Weight Without Cord:	51 g
Weight With Cord:	147 g

Environmental	
Operating Temperature:	0 ° C to 40 ° C
Storage Temperature:	-40 ° C to 70 ° C
Shock:	10 drops from 3 ft.to concrete at room temperature
ESD:	Functional after 10KV discharge
Agency:	FCC Class B,CE
Warranty:	1 year full replacement

1.2 Statement of Agency Compliance

The MAH 100 has been tested for compliance with FCC regulations and was found to be compliant with all applicable FCC Rules and Regulations.

The MAH 100 has been tested for compliance with CE standards and guidelines and was found to conform to applicable CE standards, specifically the EMC requirements EN 55024, ESD EN 61000-4-2, Radiated RF Immunity EN 61000-4-3, ENV 50204, EFT EN 61000-4-4, Conducted RF Immunity EN 61000-4-6,EN 55022,Class B Radiated Emissions,and Class B Conducted Emissions.

CAUTION
Laser Light-
Do Not Stare
Into Beam
In GaAIP   Class 2

The MAH 100 can be set to use targeting lasers. If the targeting lasers are activated,do not stare into the beams. The Code Reader's targeting lasers have been rated as Class 2 Lasers.

1.3 MAH 100 Overview

The low-cost MAH 100 is an innovative, hand-held data capture device for reading and decoding high density two-dimensional (2-D)codes and linear bar codes.
The MAH 100 is available in a UHD version for smaller very dense codes and a HD version for larger codes.
The MAH 100 working range varies from 225 mm to 200 mm and can be configured for keyboard wedge, RS232 or PCMCIA Card outputs. Codes are read accurately, quickly and omni-directionally. The reader may be set to scan in a continuous or manual mode.

1.4 Manual Overview and MAH 100 Set up

This manual is designed to help you understand how to use your MAH 100 and how to change MAH 100 settings.

Before using your MAH 100, please read the instructions that were included with your MAH 100 on how to install it. Instructions on how to install your MAH 100 are also included in this manual. See the instructions on setting up your MAH 100 that follow in later sections.

This manual is applicable for firmware versions 12.0 and higher. To find out what firmware your reader has, open a text editor program (i.e. Notepad, Microsoft Word...) and read the following code:


You will get a text string with your firmware version and Code Reader ID number (see below):

i120000081601__01681540001000

Firmware Version   **MAH 100 ID #**
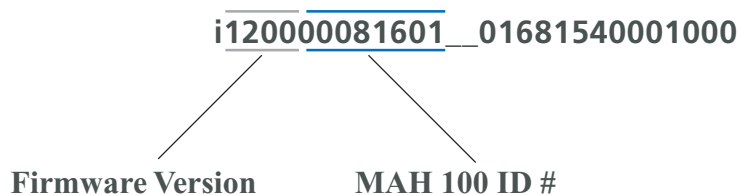
1.5 Targeting and Reading Techniques

1. Hold MAH 100 about 25,4 - 76,2 mm above the code.

2. Hold the MAH 100 still -Do NOT swipe or move the reader.

3. Press either scanning button found on either side of the MAH 100.

4. When the code has been read and decoded,the reader will beep (unless the sound on the reader has been muted) and the LED lights in the MAH 100 head will turn off.
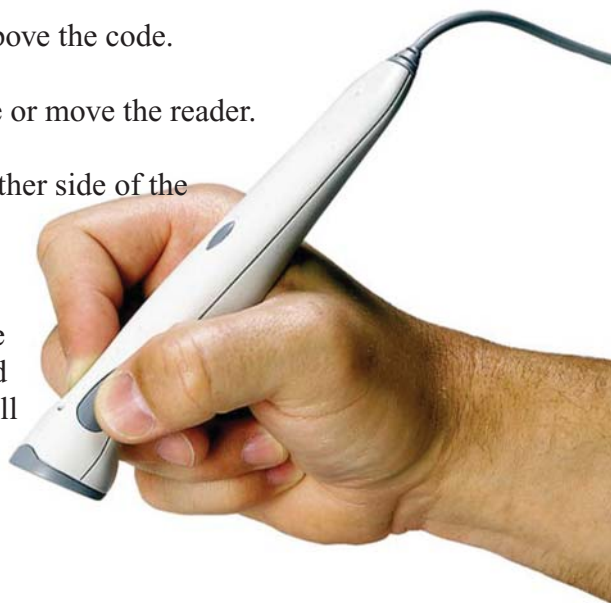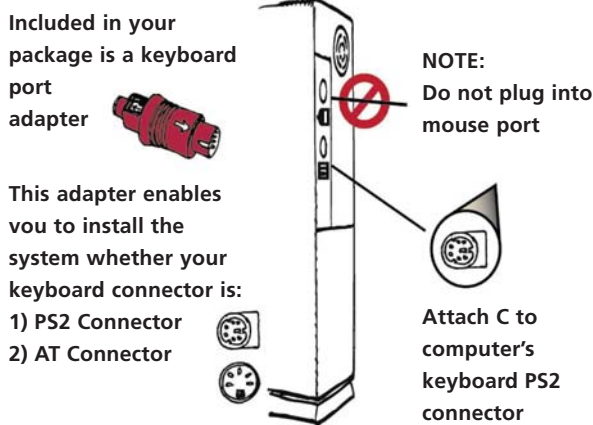
1.6 Installation Instructions:
1.6.1 Keyboard Wedge Adapter

Keyboard unplugs in the back

Power Off
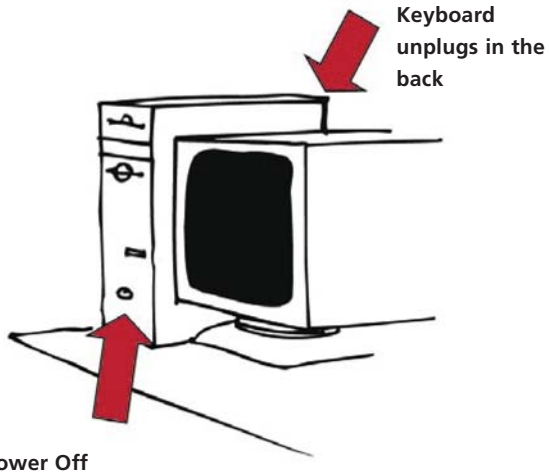
Ensure the power is off and unplug your keyboard.
Simply follow the keyboard cord to where it plugs into the computer, and unplug it.Note the location, because you will be plugging it back in momentarily.

Included in your package is a keyboard port adapter

This adapter enables you to install the system whether your keyboard connector is:
1) PS2 Connector
2) AT Connector

NOTE:
Do not plug into mouse port
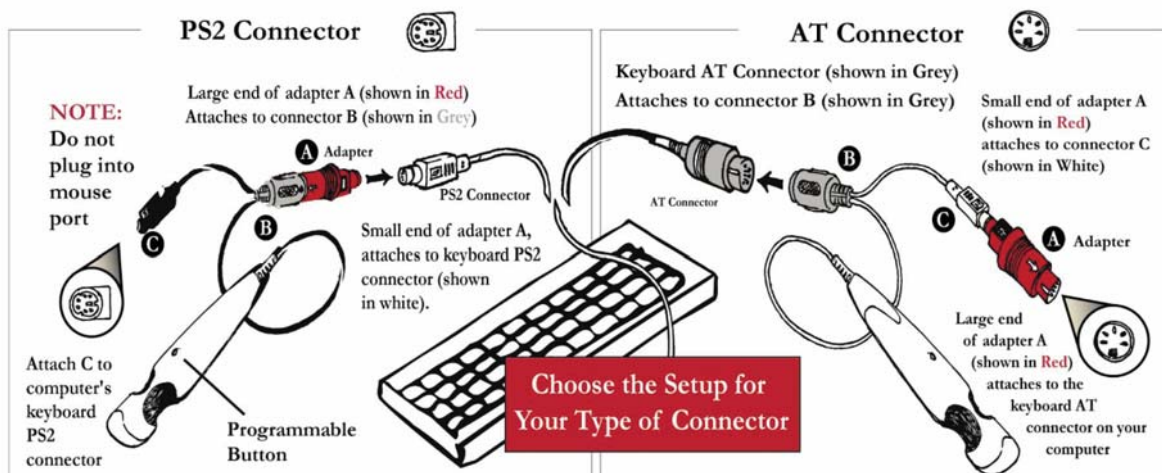
Attach C to computer's keyboard PS2 connector

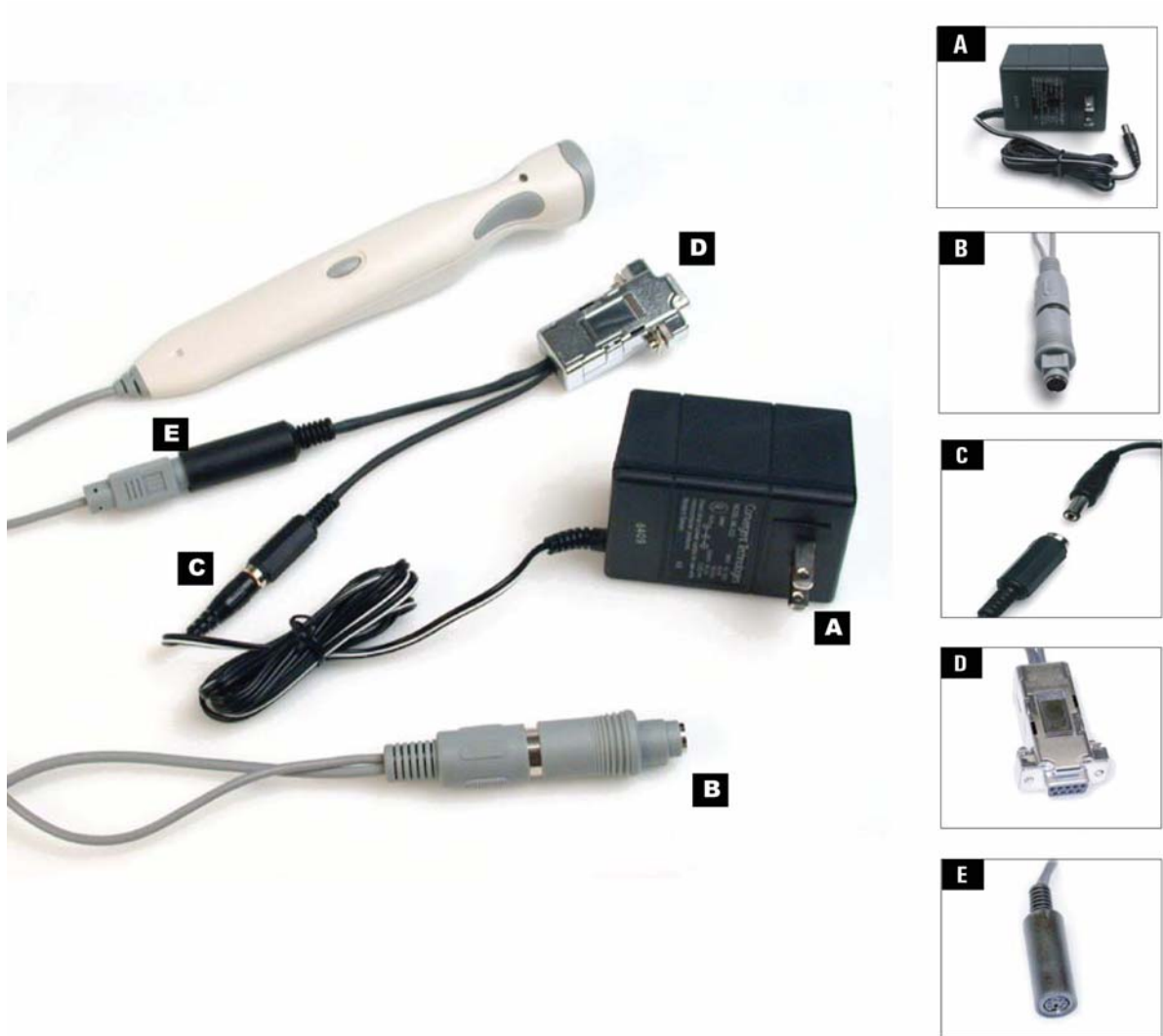**Note:** For laptop computers,you must have an external keyboard port (normally PS2 connector).
Included with your MAH 100 is an adapter that can be configured for use with a PS2 or an AT keyboard connector.

PS2 Connector

NOTE: Do not plug into mouse port

Large end of adapter A (shown in Red) Attaches to connector B (shown in Grey)

A Adapter

PS2 Connector

Small end of adapter A, attaches to keyboard PS2 connector (shown in white).

B

C

Attach C to computer's keyboard PS2 connector

Programmable Button

AT Connector

Keyboard AT Connector (shown in Grey) Attaches to connector B (shown in Grey)

AT Connector

Small end of adapter A (shown in Red) attaches to connector C (shown in White)

B

C

A Adapter

Large end of adapter A (shown in Red) attaches to the keyboard AT connector on your computer

Choose the Setup for Your Type of Connector

1.6.2 Serial Port Adapter

Please read the following before setting up your Code Reader 1.1 with serial port adapter.
A.   Plug the 230 Volt AC adapter into the wall socket.
B.   DO NOT PLUG IN large end of Code Reader 1.1 (only used for keyboard ports).
C.   Plug the small end of the serial port adpater into the 120 AC Volt adapter.
D.   Plug the serial port connection to the serial port in the back of your computer.
E.   Plug the large end of the serial port adapter into the MAH 100 PS2 plug.

2 PROGRAMMING

2.1 MAH 100 Default Settings

Restore your MAH 100 to factory default settings:

2.2 Symbology Settings

Enable your MAH 100 to read negative Data Matrix codes (codes that are inverted and printed with black modules as white modules and white modules printed as black modules):

Data Matrix

 Enable negative (inverted)Data Matrix codes

 Disable negative (inverted)Data Matrix codes

 Enable rectangle-shaped Data Matrix codes

 Disable rectangle-shaped Data Matrix codes

QR Code

 QR code enabled   QR code disabled

PDF 417

 PDF 417 enabled   PDF 417 disabled

Micro PDF 417

 Micro PDF 417 enabled   Micro PDF 417 disabled

1-D Codes - Code 39, Code 128, UPC, EAN, JAN

 1-D codes enabled   1-D codes disabled

2.3 MAH 100 Reader Controls

 Enable targeting dot laser   Disable targeting dot laser

 Enable targeting circle laser   Disable targeting circle laser

 Enable continous scanning   Disable continous scanning

 Enable reader sound   Disable reader sound

 Save settings on MAH 100

2 PROGRAMMING ◆

2.4 MAH 100 Reader Configuration

Configure your MAH 100 to work from your computer 's serial port

Configure your MAH 100 to work from your computer 's keyboard port

Configure your MAH 100 for a English language keyboard

Configure your MAH 100 for a German language keyboard

Configure your MAH 100 for a French language keyboard

Save settings on Reader

2-3

2.5 Prefix and Suffix

Scanning the following codes will add a prefix or a suffix with the indicated information either before or after each code scanned. For example,if you were scanning codes to enter information in an Excel spreadsheet,you could scan the Suffix Tab code. Then after every code you scanned, the MAH 100 would send a Tab command to your computer and advance the cursor in Excel to the next column in your spreadsheet.

Prefix   Suffix

 Tab   Tab

 Comma   Comma

 Space   Space

                                                    Return

Scan the Prefix None or Suffix None codes to turn the prefix and suffix commands off.

Prefix   Suffix

 None   None

 Save settings on MAH 100

2.6 Baude Rate

Scanning the following codes will set the baud rate for your MAH 100. The baud rate is the information transfer rate of data being passed between your MAH 100 and your computer.

1200   2400

4800   9600

19200   38400

2.7 Word Length and Stop Bit Data

For advanced users only: Set the word/character length with one of the following codes. Standard default length is 8 bits.

7 bit

8 bit

For advanced users only: Set the stop bit to one or more bits with one of the following codes:

1 stop bit   2 stop bits

Save settings on MAH 100

3 MAINTENANCE & TROUBLESHOOTING

3.1 Maintenance

Note: The MAH 100 was designed for use in a light industrial or office setting.Exposing the Reader to harsh temperatures or environments may cause the MAH 100 to malfunction.

General
The MAH 100 device operates efficiently and reliably and needs only a minimum of maintenance to operate. A few tips are given below for maintenance suggestions.

Cleaning the MAH 100 Window
The MAH 100 's window should be clean to allow the best performance of the device. The window is the clear plastic piece inside the head of the Reader.Do not touch the window. Your MAH 100 uses CMOS technology that is much like a digital camera. A dirty window may stop the MAH 100 from reading codes.
If the window becomes dirty,clean it with a soft,non-abrasive cloth or a facial tissue that has been moistened with water. A mild detergent may be used to clean the window,but the window should be wiped with a water moistened cloth or tissue after using the detergent.
The MAH 100 housing may be cleaned in the same way.

3.2 Troubleshooting

General

Your MAH 100 will perform a self-test every time it is powered up.You should see the light on the MAH 100 flash once when it is connected to a computer or hand held device that has been powered up. The MAH 100 LEDs should illuminate when the MAH 100 scan button has been pressed. If your MAH 100 does not perform as described, please review the following troubleshooting tips:

The MAH 100 does not have power, the light on the top of the MAH 100 does not flash when connected to a device, or the LED lights in the MAH 100 head do not illuminate when the MAH 100 scan buttons are pressed.
Make sure that:
   1.The MAH 100 cable is securely connected to the computer or hand held device.
   2.The host system is powered on.

The MAH 100 has problems reading codes.
Make sure that:
   1.The codes you are scanning aren 't smudged,smeared,or partially covered.
   2.The codes you are scanning aren 't larger than the maximum size the MAH 100 can read they must fit in the MAH 100 field of view.
   3.You are holding the MAH 100 at least one or more inches above the code.
   4.You try to hold the MAH 100 at different angles to read codes printed on glossy paper.
   5.The type of codes you are scanning are enabled to be read by the MAH 100.
   6.The MAH 100 window is clean.

Keyboard

Your MAH 100 does not detect your keyboard or keyboard is attached, but typing is ignored. The Keyboard Num-lock, Cap-lock and Scroll-lock indicator LEDs blink every two seconds. Read the appropriate code from those below.

keyboard never present   keyboard always present

Auto-detect keyboard presence