

COGNEX

DataMan[®] 8600 Verifier Reference Manual



2021 April 14
Revision: 5.7.7SR5.7

Legal Notices

The software described in this document is furnished under license, and may be used or copied only in accordance with the terms of such license and with the inclusion of the copyright notice shown on this page. Neither the software, this document, nor any copies thereof may be provided to, or otherwise made available to, anyone other than the licensee. Title to, and ownership of, this software remains with Cognex Corporation or its licensor. Cognex Corporation assumes no responsibility for the use or reliability of its software on equipment that is not supplied by Cognex Corporation. Cognex Corporation makes no warranties, either express or implied, regarding the described software, its merchantability, non-infringement or its fitness for any particular purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by Cognex Corporation. Cognex Corporation is not responsible for any errors that may be present in either this document or the associated software.

Companies, names, and data used in examples herein are fictitious unless otherwise noted. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, nor transferred to any other media or language without the written permission of Cognex Corporation.

Copyright © 2020. Cognex Corporation. All Rights Reserved.

Portions of the hardware and software provided by Cognex may be covered by one or more U.S. and foreign patents, as well as pending U.S. and foreign patents listed on the Cognex web site at: cognex.com/patents.

The following are registered trademarks of Cognex Corporation:

Cognex, 2DMAX, Advantage, AlignPlus, Assemblyplus, Check it with Checker, Checker, Cognex Vision for Industry, Cognex VSOC, CVL, DataMan, DisplayInspect, DVT, EasyBuilder, Hotbars, IDMax, In-Sight, Laser Killer, MVS-8000, OmniView, PatFind, PatFlex, PatInspect, PatMax, PatQuick, SensorView, SmartView, SmartAdvisor, SmartLearn, UltraLight, Vision Solutions, VisionPro, VisionView

The following are trademarks of Cognex Corporation:

The Cognex logo, 1DMax, 3D-Locate, 3DMax, BGAll, CheckPoint, Cognex VSoC, CVC-1000, FFD, iLearn, In-Sight (design insignia with cross-hairs), In-Sight 2000, InspectEdge, Inspection Designer, MVS, NotchMax, OCRMax, PatMax RedLine, ProofRead, SmartSync, ProfilePlus, SmartDisplay, SmartSystem, SMD4, VisiFlex, Xpand

Portions copyright © Microsoft Corporation. All rights reserved.

Portions copyright © MadCap Software, Inc. All rights reserved.


Other product and company trademarks identified herein are the trademarks of their respective owners.

Table of Contents

Legal Notices	2
Table of Contents	3
Symbols	4
8600 Series Handheld Verifier Kit Contents	5
Data Matrix Symbol Quality Verification	6
Upgrading a Device for Verification	6
Getting Started	7
Stand-off	7
Stand-off Installation	7
Calibration	8
Code Quality	10
Verification	10
Formatting Output Data	10
Verification Configuration	12
Saving the Setup	12
Code Quality Configuration Codes	12
Precautions	13

Symbols

The following symbols indicate safety precautions and supplemental information:

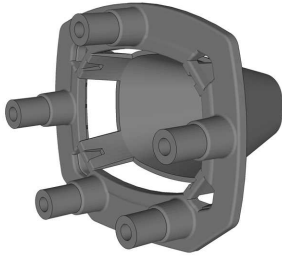
 **WARNING:** This symbol indicates a hazard that could cause death, serious personal injury or electrical shock.

 **CAUTION:** This symbol indicates a hazard that could result in property damage.

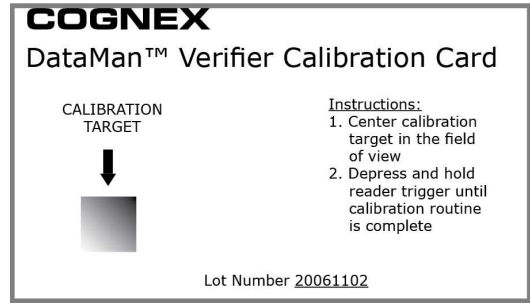
 **Note:** This symbol indicates additional information about a subject.

 **Tip:** This symbol indicates suggestions and shortcuts that might not otherwise be apparent.

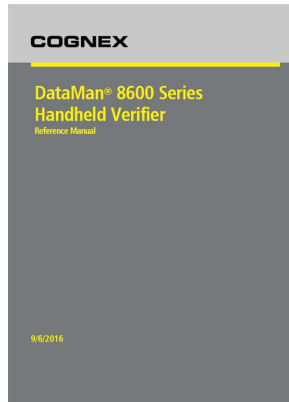
8600 Series Handheld Verifier Kit Contents



8600 verifier stand-off



Calibration card (stored in protective sleeve)



This document

i **Note:** Refer to your *DataMan 8600 Reference Manual* for information on initial setup and establishing communication with the reader itself, as well as compliance information.

⚠ WARNING: LASER LIGHT, DO NOT STARE INTO BEAM: CLASS 2 LASER PRODUCT FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE SERIOUS INJURY



Data Matrix Symbol Quality Verification

DataMan 8600 Verifier handheld verifiers ensure that a Data Matrix symbol meets the AIM DPM (Direct Part Mark) / ISO/IEC TR 29158 Quality Guideline.

The DataMan 8600 Verifier handheld verifiers provide:

- **Contract Compliance:** The DataMan 8600 Verifier software, integrated lighting, and fixed optics meet the AIM-DPM / ISO/IEC TR 29158 Quality Guideline.
- **System Calibration:** The DataMan 8600 Verifier verifier includes a certified calibration card necessary to calibrate the reader.

Upgrading a Device for Verification

If you are upgrading a previously purchased DataMan 8600 Verifier reader to be used as a verifier, your reader must be using firmware version 5.4.4 or newer. To update the firmware:

1. Connect your reader to the DataMan Setup Tool.
2. Choose **System > Update Firmware**.
3. Select the file *DM8600_v.5.4.4.bin.gz* or newer from the directory where the firmware update automatically navigates (Cognex\DataMan\Firmware\DM8000 Series).

To enable the DPM Verification feature, you must upload a feature key file to the reader:

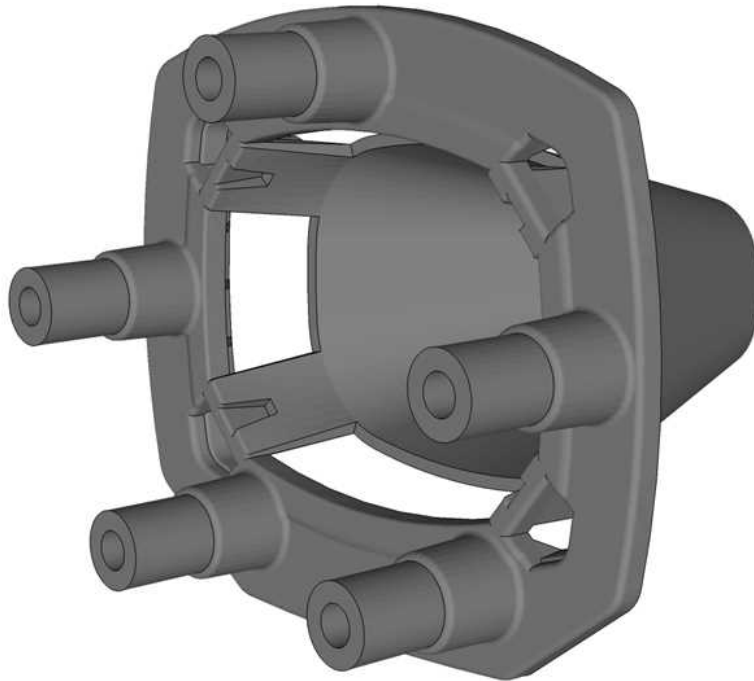
1. Connect the reader to the DataMan Setup Tool.
2. Choose **System > Upload Feature Key**.
3. Select the feature key file that you received from Cognex.
4. The reader automatically reboots after the upgrade and it is ready to use for verification.

Getting Started

Stand-off

The stand-off is an accessory that consists of a plastic frame that is attachable to the device (see below).

The stand-off accessory comes with one set of 7mm spacers which must be screwed onto the stand-off.



The reading distance the spacer provides is **7mm**.

Stand-off Installation

1. Attach the stand-off carefully to your DataMan 8600 Verifier reader.



2. The stand-off snap-fits into the reader.



Calibration

1. Start the DataMan Setup Tool and connect to your reader.
2. Select the **Code Quality Settings** task pane.
3. Check the box for **Verification Enabled** under the **Verification** tab.
4. Place the verifier against the calibration card with the symbol centered below the reader, and squeeze the trigger



5. Continue squeezing the trigger. Calibration can take several seconds

The DataMan Setup Tool displays a graphic guide if the symbol is not precisely aligned with the reader. Adjust the position and rotation of the reader until the center of the red rectangle lies inside the green rectangle and there is no more than 10 degrees rotation between the symbol and the reader. The reader beeps once when calibration is complete.

- The system displays a green check box that says **System Calibrated** under **Calibration** in **Verification Settings**.

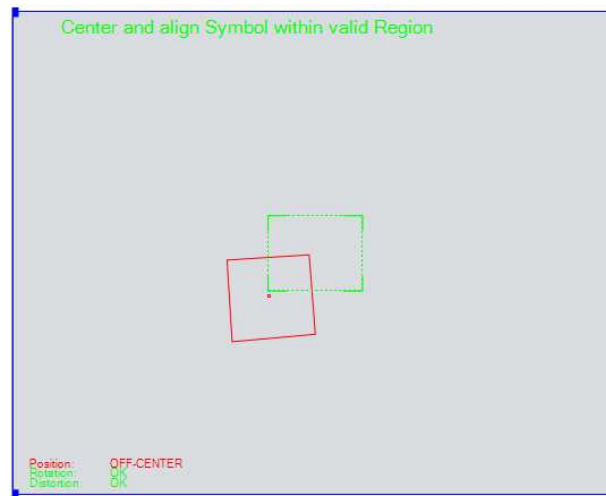


Code Quality

Verification

In order to perform Direct Part Mark Verification, your reader must be calibrated as described in the previous section. To read symbols and view verification results, perform the following steps:

1. Start the DataMan Setup Tool and connect to your reader.
2. Navigate to **Settings > Code Quality**.
3. Under the Verification Settings tab, check **Verification Enabled**.
4. Select the **Results Display** task pane by clicking **Code Quality** under **View**.
5. Place the verifier against the symbol and squeeze the trigger. The symbol must be centered within the field of view, and the reader must be perpendicular to the surface containing the symbol and at the correct rotation. If the reader is out of position, the DataMan Setup Tool displays this guide:



The verifier stand-off must be used to ensure correct symbol presentation and lighting requirements for the AIM-DPM / ISO/IEC TR 29158 Quality Guideline.

6. Move the reader until the center of the **red** rectangle lies within the **green** target rectangle. The reader beeps to indicate that the symbol has been read and verified.

Formatting Output Data

Use the **Data Formatting** task pane of the DataMan Setup Tool to construct a customized output string each time you read and verify a symbol. This allows the verifier to return Code Quality results when connected to a third-party application instead of the DataMan Setup Tool.

Note: Consult the Q and A of the **Data Formatting** task pane for more detailed information on how data formatting works.

Note: Code Quality metrics are available in script-based formatting. An example snippet is available at **Insert Snippet > Simple formatting > Outputting Code quality parameters**. For more detailed information, see the *DataMan Communications and Programming Guide*.

In addition to standard formatting, the DataMan Setup Tool supports the use of Perl-Style Regular Expression features in Advanced mode.

After verification, when connected to the DataMan Setup Tool, you can configure the Code Quality results be saved by enabling **Report Storage** under the **Data Logging** task pane.

Code Quality results can be sent from the reader by configuring the output format in the **Standard Formatting** task pane. The reader does not have to be connected to the DataMan Setup Tool to send Code Quality results.

Verification Configuration

Saving the Setup

Once you have configured your reader with the settings you want it to use, choose **System > Save Settings** to save the configuration or click the **Save Settings** icon on the top icon row.

Use the **Backup** feature to save the configuration to a directory on the PC. A saved configuration can be opened later and uploaded to any reader, allowing multiple readers to use the same configuration settings.

Note: Each reader must be calibrated individually.

Code Quality Configuration Codes



Code Quality On



Code Quality Off

See **DataMan® Configuration Codes** for the supported reader programming codes.

Note: When applying polarized filter on the reader, it is recommended to read the codes from a printed material. It is possible that the reader with a polarized filter cannot read the code correctly from a screen.

Precautions

To reduce the risk of injury or equipment damage, observe the following precautions when you install the Cognex product:

- This product is intended for industrial use in automated manufacturing or similar applications.
- The safety of any system incorporating this product is the responsibility of the assembler of the system.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Route cables and wires away from high-current wiring or high-voltage power sources to reduce the risk of damage or malfunction from the following causes: over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10X the cable diameter.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purposes only and can change without notice.

