

DataMan™ 8600 Series

Handheld Verifier

Quick Reference Guide

	8600 Series Handheld Verifier Kit Contents		Page 1
2	Data Matrix Symbol Quality Verification		Page 2
3	Getting Started	Stand-off Distances • Stand-off Installation • Calibration	Page 3
4	Code Quality	Verification • Results • Formatting Output Data • Logging Data	Page 6
6	Verification Configuration	Saving the Setup • Code Quality Configuration Codes	Page 10

8600 Series Handheld Verifier Kit Contents





Calibration card (stored in protective sleeve)

COGNEX[®] Batatam[®] BBG Sense Handheld Verifier

This document

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



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

Cognex DataMan 8600 handheld verifiers ensure that a Data Matrix symbol meets the AIM DPM (Direct Part Mark) Quality Guideline.

The DataMan 8600 handheld verifiers provide:

- Contract Compliance: The DataMan 8600 software, integrated lighting, and fixed optics meet the AIM DPM Quality Guideline.
- System Calibration: The DataMan 8600 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 reader

- to be used as a verifier, your reader must be using firmware version
- 5.4.0 CR1 at a minimum. To update the firmware:
- 1. Connect your reader to the DataMan Setup Tool.
- 2. Choose System->Update Firmware.
- Select the file DM8600_v5.4.0_cr1.bin.gz 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 receive from Cognex.
- 4. The reader automatically reboots after the upgrade and it is ready to use for verification.

Getting Started: Stand-off Distances

The stand-off is an accessory that consists of a plastic frame that is attachable to the device (see below) and various spacers. By threading in the right spacers, different fixed mechanical reading distances can be set.



With a combination of 5mm, 7mm, and 10mm spacers, the following reading distances can be set:

• 8,3 mm (without spacer – 30° illumination)

• 30,3 mm

• 13,3 mm

3

• 15,3 mm (45° illumination - same distance as DM7500 Verifier stand-off)

- 20,3 mm
- 23,3 mm
- 25,3 mm (60° illumination)

• 18,3 mm

NOTE: If 5mm spacers are used in combination with other spacers, the 5mm spacers must be placed on top due to their shorter internal thread.

NOTE: 8.3 mm distance is required for AIM-DPM verification.

Getting Started: Stand-off Installation

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



The stand-off snap-fits into the reader.



Getting Started: Calibration

- 1. Start the DataMan Setup Tool and connect to your reader.
- 2. Select the Code Quality Settings task pane.
- 3. Place the verifier against the calibration card with the symbol centered below the reader, and squeeze the trigger.



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

The 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.

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. Enable the Turn Code Quality On/Off icon in the tool bar.



NOTE: You can activate Code Quality mode by navigating to the **Code Quality Settings** pane and ticking the Code Quality Enabled box.

- 3. Select the **Results Display** task pane.
- 4. 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 Setup Tool displays this guide:



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

5. 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.

Code Quality: Results

The **Results Display** task pane presents the results of the verification on the right-hand side.

Pase Pane	S	×	Overall verification result (Pass/Fail)
Code Quality	All		1
F	Result	Grade	
Symbol Grade		в	
Cell Modulation		В	Individual AIM/DPM matrice and grader
Fixed Pattern Damage		A	
Reference Decode		A	
Minimum Reflectance	+96.62	A	
Cell Contrast	+0.871	A	
Axial Non-Uniformity	+0.041	A	
Unused Error Correction	+1.000	A	
Grid Non-Uniformity	+0.110	A	U
Process Control Metr	ics		1
Cell Growth (CGH)	+14.047 n	nils	Process control metrics (if enabled)
Cell Growth (CGV)	+15.078 n	nils	

For more information on interpreting the verification results, enable Q and A (**View->Q+A Help**). The **Results Display** task pane can toggle between displaying results and Q&A information.

Code Quality: 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.

a Matrix	QR Code / MaxiCode	e / Aztec Code	DotCode	1D / Stacked / Po	ostal Unive
Leadir	ng Text				
Data					
Gene	eral Validation Qual	ity			
<ce< td=""><td>II Modulation Grade></td><td>0</td><td></td><td></td><td>~</td></ce<>	II Modulation Grade>	0			~
<fix< td=""><td>ced Pattern Damage</td><td>Grade></td><td></td><td></td><td></td></fix<>	ced Pattern Damage	Grade>			
<ce< td=""><td>II Contrast Grade></td><td></td><td></td><td></td><td></td></ce<>	II Contrast Grade>				
<ax< td=""><td>ial Non-Uniformity Me</td><td>etric></td><td></td><td></td><td></td></ax<>	ial Non-Uniformity Me	etric>			
<ax <ax< td=""><td>ial Non-Uniformity Me ial Non-Uniformity Gr</td><td>ade></td><td></td><td></td><td>-</td></ax<></ax 	ial Non-Uniformity Me ial Non-Uniformity Gr	ade>			-
<ax <ax </ax </ax 	ial Non-Uniformity Me ial Non-Uniformity Gr	set sub-string r	ange		Ŧ
<ax <ax< td=""><td>ial Non-Uniformity Me ial Non-Uniformity Gr</td><td>stric> ade> Set sub-string r</td><td>ange Ren</td><td>nove</td><td>-</td></ax<></ax 	ial Non-Uniformity Me ial Non-Uniformity Gr	stric> ade> Set sub-string r	ange Ren	nove	-
<axi< td=""><td>ial Non-Uniformity Me ial Non-Uniformity Gr Add Ill string><sp><cell co<="" td=""><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td>Ţ</td></cell></sp></td></axi<>	ial Non-Uniformity Me ial Non-Uniformity Gr Add Ill string> <sp><cell co<="" td=""><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td>Ţ</td></cell></sp>	set sub-string r	ange Ren	nove	Ţ
<axi <axi </axi </axi 	ial Non-Uniformity Me ial Non-Uniformity Gr Add Ill string> <sp><cell co<="" td=""><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td>•</td></cell></sp>	set sub-string r	ange Ren	nove	•
<axi <axi< td=""><td>ial Non-Uniformity Me ial Non-Uniformity Gr Add Add ill string><sp><cell co<="" td=""><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td></td></cell></sp></td></axi<></axi 	ial Non-Uniformity Me ial Non-Uniformity Gr Add Add ill string> <sp><cell co<="" td=""><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td></td></cell></sp>	set sub-string r	ange Ren	nove	
<axi <axi </axi </axi 	ial Non-Uniformity Me ial Non-Uniformity Gr Add all string> <sp><cell co<br="">nating Text</cell></sp>	set sub-string r	ange Ren	nove	•
<axi< td=""><td>ial Non-Uniformity Mi ial Non-Uniformity Gr Add ill string><sp><cell co<br="">nating Text</cell></sp></td><td>set sub-string r</td><td>ange Ren</td><td>nove</td><td>-</td></axi<>	ial Non-Uniformity Mi ial Non-Uniformity Gr Add ill string> <sp><cell co<br="">nating Text</cell></sp>	set sub-string r	ange Ren	nove	-
<axi <axi </axi </axi 	ial Non-Uniformity Gr ial Non-Uniformity Gr Add ill string> <sp><cell co<br="">nating Text</cell></sp>	stric> ade> Set sub-string r	ange Ren	nove	
<axi <axi <fu Termir Outpu</fu </axi </axi 	ial Non-Uniformity Mc ial Non-Uniformity Gr Add all string> <sp><cell co<br="">nating Text :R/LF t Options</cell></sp>	stric> ade> Set sub-string r	Ren	nove	•

_ . . _

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. Example snippet is available at Insert Snippet->Simple formatting->Outputting Code quality parameters.

For more detailed information, please refer to the **Communi**cations and **Programming Guide**.

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

Code Quality: Logging Data

Use the **Data Logging** task pane to generate a Code Quality Report for each symbol that you read and verify. Be aware that data logging works only when the reader is connected to the DataMan Setup Tool.

- 1. Select the Data Logging task pane under System Settings.
- 2. Use the **Save in** option under Report Storage to configure a directory location to save each report as a pdf along with an image of the verified symbol, as shown in the following example:

ecoded Images		
Save in:	C:\Users\User 1\Documents	Select
Prefix filename with		
iled Images		
Save in:	C:\Users\User 1\Documents	Select
Prefix filename with		
eport Storage		
Save in:	C:\Users\User 1\Documents	Select
	Include timestamp	
Filename Structure		
Filename Structure Filename with	CQ	

In addition, you can enable the **Prefix filename with** option to give each Code Quality Report a set prefix.

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.

Choose **File->Save Configuration** 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

Use the following Code Quality configuration symbols to quickly turn Code Quality on and off without connecting the reader to the DataMan Setup Tool. Additional Code Quality Reader Configuration symbols are available in the document **Reader Configuration Codes**.

Code Quality On



Code Quality Off





Copyright © 2014 Cognex Corporation All Rights Reserved. This document may not be copied in whole or in part, nor transferred to any other media or language, without the written permission of Cognex Corporation. The hardware and portions of the software described in this document may be covered by one or more of the U.S. patents listed on the Cognex web site http://www.cognex.com/patents.asp. Other U.S. and foreign patents are pending. Cognex, the Cognex logo, UltraLight and DataMan are trademarks, or registered trademarks, of Cognex Corporation.

