



# MAXIM MAXREFDES79 4 port IO-Link Master V1.1.2 Test Report

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## 2 References

Ref No.	ID	Document Title	Date	Version
1	IS_ICBT_001_009	IO-Link Test-Master Test Interface	13.01.2014	1.2
2	10.002	IO-Link Interface and System Specification	July 2013	1.1.2
3	10.032	IO-Link Test Specification	July 2014	1.1.2
4				

## 3 Version history

Version	Date	Description	Status	Author
1.0	16-01-2015	Initial Revision	Draft	LM
1.1	29-01-2015	Minor corrections after review	Draft	OW

Status: M = Modified, A= Added, D = Deleted



## 4 Test environment

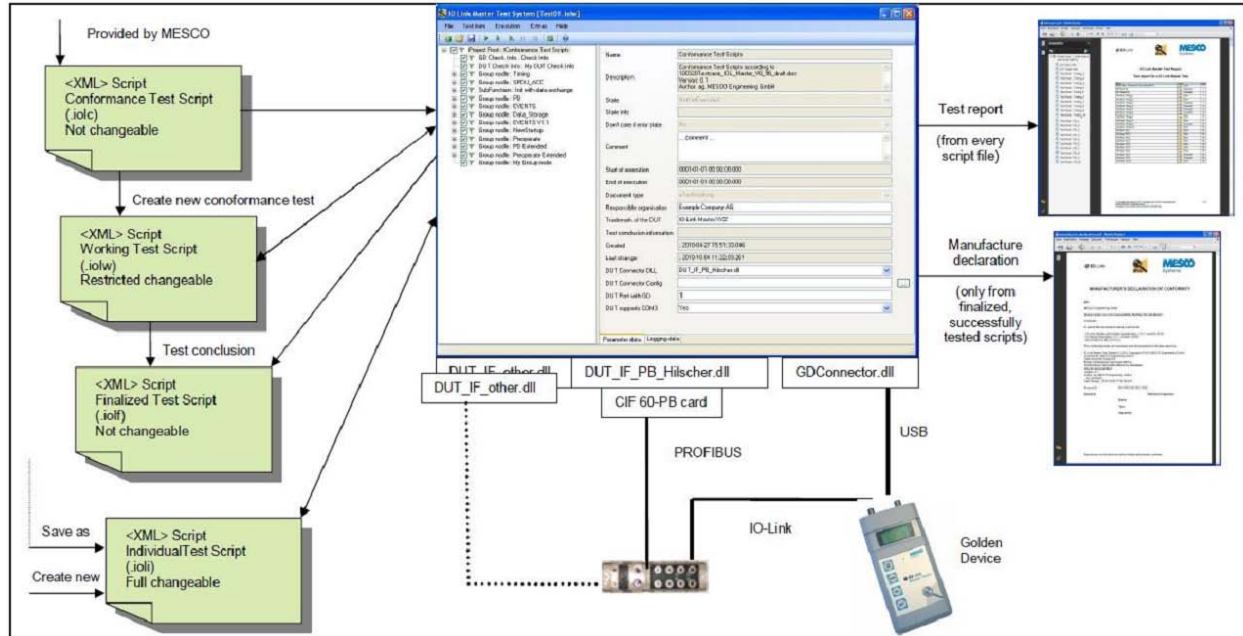


Figure 1 Test Environment with DUT: IO-Link Master MAXREFDES79

### 4.1 Golden Device

Serial number: GD000010  
Hardware revision: 0100  
Firmware revision: 0035

### 4.2 IO-Link Master

IO-Link Master: Maxim MAXREFDES79 4 port IO-Link Master V1.1.2  
Firmware revision: processor revision: 1, physical layer revision: 1, IO-Link stack revision: 2

#### 4.2.1 Master gateway application

TEConcept IO-Link Master gateway (revision 1) application has been implemented with USB interface.

### 4.3 IO-Link Master Tester PC application

Application version: 1.1.5.1

### 4.4 Test script file

IOL\_1\_1\_MasterConformanceTest\_V\_1\_1\_5\_0.iolc



## 4.5 Communication interface between the master and the IO-Link Master Tester program

Communication protocol: TEConcept Master Serial Test Interface [1].  
Communication DLL: DUR\_IF\_RS232\_ICBTECH.dll

## 5 Test results

***The tests did show, that the MAXREFDES79 IO-Link master operates and complies with the IO-Link specification V1.1.2 .***

*The master test system has issued the attached, automatically generated test report document that marks the state of some tests as "Error" or "Warning". We analyzed the reported issues and did not find any indication for a necessary fix of the master stack implementation.*

### 5.1 Test cases marked with "Error" or "Warning"

*All reported errors or warnings are generic issues of the present Master Test system and are not related to the device under test. The team that develops and supports the master test system has been informed about these issues and will fix them the next Software/Firmware update of the test system. Comments on every reported error and warning are given below to make evident that these are false alarms.*

#### 5.1.1 TC\_0158

After the WURQ signal the Master has to issue the first test message after time  $T_{REN}$  and  $T_{DMT}$ . The maximum  $T_{REN}$  time is 500  $\mu$ s (Table 9 [2]).

The Master Tester system does not consider the  $T_{REN}$  time correctly when checking the delay between the WURQ signal and the first test message ( $T_{DMT}$ ); this is why the test case is marked as failed.

#### 5.1.2 TC\_0164

The Master Tester system unexpectedly stops at the step "DUT Configuration: 1Byte Sensor 1Byte Actor" and causes a false test case failure.

The test step that here causes the failure in many other cases where it does not cause any issues. This problem did not show up in earlier versions of the master test system.

#### 5.1.3 TC\_176

The Golden Device gets from the test system a command to mirror the process data but it doesn't mirror it correctly and this is why the test case fails.

#### 5.1.4 TC\_0177, TC\_0178, TC\_0290, TC\_0291

All of these test cases are waiting for an not further specified and optional event from the Master after the PD invalid bit has been set by the Golden Device.



However the test system incorrectly expects a specific event code and qualifier, missing or other event codes and qualifiers are erroneously refused.

### 5.1.5 TC\_0213, TC\_0214

These test cases are optional (Table 8 [3]) because they require the optional feature 'Go to Preoperate' state from the Master gateway application.

This optional 'Go to preoperate' feature isn't supported by our Master gateway application; these test cases should be ignored by the Master Tester system and not issue an error.

## 5.2 Passed test cases with warning

### 5.2.1 TC\_0183

One or two Master read messages to parameter 0x02 at startup permitted. Legacy Master (V1.0) sends two and Master with version  $\geq 1.1$  sends one.

The Master MAXREFDES79 sends one because its version is V1.1.2.

According to the test specification (Table 192 [3]) the test system has to display a warning in this test case if the Master doesn't read from the address 0x02 twice.

### 5.2.2 TC\_0184 – TC\_0187, TC\_0192-TC\_0196, TC\_0222, TC\_0285-TC\_0286

According to the test specification these test cases have to accept if the Master reads the 0x02 parameter twice, but shouldn't display the warning message if the Master reads it only once.

## 6 Included test report files

Maxim\_MAXREFDES79\_16012015.ioIf – IO-Link Master Tester application test script.

Maxim\_MAXREFDES79\_16012015\_Report.pdf – Test report.