



AnyBus Certification

Specification and instructions

Rev. 1.1

Table of Contents

1	AnyBus fieldbus conformance	3
1.1	HMS Policy	3
1.2	Test set-up	3
1.3	Certification & fieldbus logo	3
1.4	Product certification	4
2	Test organisations	4
2.1	Profibus	4
2.2	DeviceNet	5
2.3	Interbus	5
2.4	ControlNet	6
2.5	Ethernet IP	6
2.6	Modbus TCP/ Modbus RTU	7
2.7	Fip-IO	7
2.8	Modbus Plus	8
2.9	Remote I/O	8
2.10	Lonworks	9
2.11	Can Open	9
2.12	CC-link	9
2.13	AS-Interface	10
3	Summary	10

1 AnyBus fieldbus conformance

1.1 HMS Policy

HMS policy is that all our Embedded Products (AnyBus-S, AnyBus-M, AnyBus-IC) shall be tested and verified for fieldbus conformance. This is normally a test done by the specific fieldbus organisation, but can also in some specific cases be a HMS verification done with a tool recommended by the fieldbus organisation or with help of reference customers. The reason for this certification or pre-certification is that HMS want to verify that all modules follow the specification of the different fieldbuses and that our embedded modules will pass a product certification done by our customer, using our embedded module as the fieldbus interface.

1.2 Test set-up

These certifications are done with the AnyBus modules initialised in standard mode. The test will then verify that the module full fill the specification of the fieldbus regarding software and hardware in this standard mode.

If a change of the behaviour of the module is done by for example using a fieldbus specific mailbox or changing of configuration files, HMS verification or certification is not valid any longer. The reason for using these non-standard functions can be that the product using the AnyBus module requires a function that is not included in the standard use of the AnyBus module or that for example the module shall be viewed on the networks side with identity (product name, vendor name etc) of the customer product.

Any change of the performance outside a standard initialisation of the AnyBus module requires that the customers use their own ID number for the module and that the configuration file (if used for the specific fieldbus) is updated. If a change of the module is done a greater knowledge of the specific fieldbus is needed. It is also possible to contact the fieldbus organisation test lab or HMS to verify that this change does not affect the possibility to make a new product certification.

The fact that the AnyBus module is tested or pre-certified will not make the complete product where the AnyBus is embedded certified. To achieve this, the complete product normally needs to be sent to a test centre for a full fieldbus certification.

1.3 Certification & fieldbus logo

Normally the fieldbus organisations require that the company that want to certify their products shall be a member in their organisation. Also the use of the fieldbus logo on a product and in manuals often requires that the company is a member of the fieldbus organisation and in some cases that the product also is certified for the specific fieldbus.

Because the AnyBus modules normally are certified for the specific fieldbuses this can be used as a reference for the customer product. Both as a statement of fieldbus conformance (when used in standard mode) and use of fieldbus logos, but then it must be written clearly in manuals and in product related information that it is the AnyBus module that is certified, not the complete product.

Visit HMS web page, www.AnyBus.com and select the related product under the support section to download the certification document of that module. If you do not find the certificate for the specific module, contact HMS for more information. The reason that the certificate is not present on our Web can be that the module is being re-tested or the test is pending at the moment.

1.4 Product certification

When certifying a device the fieldbus organisation is contacted for information about a recommended test laboratory. The complete device is sent to for verification that it is conform to the specification of the fieldbus. In some cases this test is reduced because the AnyBus module is pre-certified, but this can differ depending on use of the AnyBus module and what regulations the test laboratory follows. All information about how to apply for a certificate can be found at the fieldbus organisations web page. When the complete product is certified it will be listed at the fieldbus organisation as a certified device.

2 Test organisations

2.1 Profibus

All products that claim to be Profibus compatible must pass the test at a certified test site. Certified test laboratories can be found at www.profibus.com/support.html. HMS is co-operating with Siemens AG's Comdec in Fürth since our first Profibus-DP certification 1993. After successful tests the test report are sent to the Profibus organisation for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for Profibus that want to state that the product is certified must perform a test at one of the Profibus test laboratories, but it will in most cases be a limited test to verify compliance with the performed test for the AnyBus module. Normally the price is also reduced when making a full product certification using the standard AnyBus-S module for Profibus. Please, verify testing and price with the test laboratory that will make the certification of your product.

Price indication

Product	AnyBus type	Normal price	Price using AnyBus
Modular slave	AnyBus-S, AnyBus-IC	2500 EUR	Approx. 1600 EUR
Master	AnyBus-M	4900 EUR	Approx. 4350 EUR

Remark: Price indication from Comdec in Germany (January 2003).

For more information regarding how to apply for a certification visit www.profibus.com/support.html for contact information of the closest test laboratory or contact HMS direct for more information.

2.2 DeviceNet

All products that claim to be DeviceNet compatible must pass the test at a certified test site. Certified test laboratories can be found at www.odva.org (under certifications). Also all other information how the test is performed and order document can be found at this web page. HMS normally uses the test laboratory in Michigan, USA for testing of our AnyBus modules. After successful tests the test report are sent to the ODVA (Open DeviceNet Vendor Association) organisation for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for DeviceNet that want to state that the product is certified must perform a test at one of the ODVA test laboratories, due to that a DeviceNet node have much possibilities to be customised, the AnyBus approval will not reduce the price of a new product test. However, knowing that AnyBus is a DeviceNet pre-tested module makes the test completion very easy and predictable.

Price indication

Product	AnyBus type	Normal price (member)	Price (non member)
Modular slave	AnyBus-S, AnyBus-IC	2500 EUR	5000 EUR
Master	AnyBus-M	2500 EUR	5000 EUR

Remark: Price indication from ODVA in USA (November 2003).

2.3 Interbus

All products that claim to be Interbus compatible must pass the test at a certified test site. Certified test laboratories can be found at www.interbusclub.com (under certification). Also all other information how the test is performed and order document can be found at this web page. HMS has used the Phoenix test laboratory in Blomberg for testing of our AnyBus modules. After successful tests the test report are sent to the Interbus Club for final approval and registration.

It is from year 2003 not possible to fully certify an embedded product for Interbus; the AnyBus modules are tested for compliance but will not receive a certificate. Only a complete end product can receive a written certificate. Customer products using an AnyBus module for Interbus that want to state that the product is certified must perform a test at one of the Interbus test laboratories.

Price indication

Product	AnyBus type	Normal price
Modular slave	AnyBus-S	2550 EUR (basic test)

Note: depending on what functionality the node will support, the prices can differ. Please contact the test laboratory for price information.

Note: The Interbus specification have been updated regarding the LED order on the module, after the Anybus-S modules where developed. The specification shows that the LED shall be placed in special order and structured meaning. Our module have been approved because of our concept was developed before the new specification. But, depending on how the Anybus module is placed in the end application, it can affect a product certification. Please contact HMS for more information.

2.4 ControlNet

All products that claim to be ControlNet compatible must pass the test at a certified test site. Certified test laboratories can be found at www.controlnet.org/ (under conformance). Also all other information, for example how the test is performed can be found at this web page. For ordering a certification test, go to www.controlnet.org/05_conf/05_test_prod.htm. For ControlNet it is also possible to buy a test program, which can be used at the customer development (see the ControlNet web page under orders: www.controlnet.org/05_conf/05_cn_testsoft.htm). HMS uses the ControlNet International (CI) test laboratory in USA for testing of our AnyBus modules. After successful tests the test report are sent to ControlNet International for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for ControlNet that want to state that the product is certified must perform a test at one of the CI test laboratories, due to that a ControlNet node have much possibilities to be customised, the AnyBus approval will not reduce the price of a new product test. However, knowing that AnyBus is a ControlNet pre-tested module makes the test completion very easy and predictable.

Price indication

Product	AnyBus type	Normal price (member)	Price (non member)
Modular slave	AnyBus-S	2000 EUR (+400EUR/h)	3000 EUR (+600EUR/h)

2.5 Ethernet IP

All products that claim to be Ethernet IP compatible must pass the test at a certified test site. Certified test laboratories can be found at www.odva.org/ (under conformance). Also all other information, for example how the test is performed can be found at this web page under ETHERNET/IP. For ordering a certification test, go to www.odva.org/, then select ETHERNET/IP – downloads – order forms – Ethernet/IP conformance testing. HMS uses the ODVA test laboratory in Michigan for testing of our AnyBus modules. After successful tests the test report are sent to ODVA for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for Ethernet IP that want to state that the product is certified must perform a test at one of the CI test laboratories, due to that a Ethernet IP node have much possibilities to be customised, the AnyBus approval will not reduce the price of a new product test.

Price indication

Product	AnyBus type	Normal price (member)	Price (non member)
Modular slave	AnyBus-S, AnyBus-IC	2500 EUR	5000 EUR

2.6 Modbus TCP/ Modbus RTU

All products that claim to be Modbus TCP compatible must pass the test at a certified test site. Certified test laboratories and contact information can be found at www.modbus.org/default.htm (under contact information). Also all other information, for example how the test is performed can be found at this web page. To order a certification test, go to www.modbus.org/submittalform.pdf. HMS uses the test laboratory in Michigan for testing of our AnyBus modules. After successful tests the test report are sent to the Modbus organisation for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for Modbus TCP that want to state that the product is certified must perform a test at one of the Modbus test laboratories, due to that a Modbus TCP node have much possibilities to be customised, the AnyBus approval will not reduce the price of a new product test.

Price indication

Product	AnyBus type	Normal price (member)	Price (non member)
Modular slave TCP	AnyBus-S, AnyBus-IC	1350 EUR	1500 EUR
Modular slave RTU	AnyBus-S	1080 EUR	1200 EUR

2.7 Fip-IO

All products that claim to be Fip-IO compatible must pass the test at a certified test site. The Certified test laboratory is situated at Schneider Automation with the following contact information.

Schneider Automation
245 rte des lucioles
06903 Sophia Antipolis cedex
+33 4 92 38 22 73
Contact person: Gerald Spilmont
Email: gerald.spilmont@modicon.com

For more information how the test is performed and for ordering document please contact Modicon. HMS normally uses this test laboratory in France for testing of our AnyBus modules.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for Fip-IO that want to state that the product is certified may need to perform a test at one of the Modicon test laboratories. Please contact the test laboratory to find out if a re-test is necessary for your product.

Price indication

Product	AnyBus type	Normal price
Modular slave	AnyBus-S	5600 EUR

2.8 Modbus Plus

Modbus Plus is a proprietary system of Modicon.

All vendors using Modbus Plus internally in their products must be approved under Modicon's "ModConnect partners program".

Modicon must also approve use of AnyBus modules for Modbus Plus. This is normally done via a license agreement via ModConnect and the customer of the AnyBus product for Modbus Plus. Contact HMS for more information for licensing Modbus Plus of Modicon.

If using the AnyBus module for Modbus Plus and designing the end application after HMS design rules, it will normally not be necessary to perform a certification test on the end product.

2.9 Remote I/O

REMOTE I/O is a proprietary system of Rockwell Automation.

All vendors using REMOTE I/O internally in their products must be approved under Rockwell Automation's "Third party program". This approval gives the vendor the right to use Rockwell patent technology and purchase the REMOTE I/O Communication Asic.

Rockwell Automation must also approve use of AnyBus modules for REMOTE I/O. This is normally done via a license agreement via Rockwell and the customer of the AnyBus product for REMOTE I/O. Contact HMS for more information for licensing REMOTE I/O of Rockwell Automation.

No certification of the product using the AnyBus modules REMOTE I/O is necessary.

2.10 Lonworks

All products that claim to be Lonworks compatible/verified must pass the test at a certified test site. Certified test laboratories can be found at www.lonmark.org/products/lmcerti.htm. Also all other information how the test is performed and order document can be found at this web page. HMS has not tested our AnyBus modules at the Lonworks test laboratory. The reason for this is that our modules from beginning does not support a profile, our customers build up this profile during in-design of the module. The testing HMS have done of the module is internal verification of the functionality.

Customer products using an AnyBus module for Lonworks that want to state that the product is certified must perform a test at one of the Lonworks test laboratories.

2.11 Can Open

All products that claim to be Can Open compatible must pass the test at a certified test site. Certified test laboratories can be found at www.can-cia.org/canopen/conformance/. Also all other information how the test is performed and order document can be found at this web page. After a successful tests the test report are sent to the Can In Automation organisation for final approval and registration.

For the AnyBus-S Can Open module HMS have performed an in-house test using the recommended test software from CIA. The module has passed this test for one specific version. For more information on the latest tested version, contact HMS. Customer products using an AnyBus module for Can Open that want to state that the product is certified must perform a test at one of the CIA test laboratories. Price information for Can Open testing is written on the CIA web page www.can-cia.org/canopen/conformance/.

2.12 CC-link

All products that claim to be CC-Link compatible must pass the test at a certified test site. Certified test laboratories can be found at http://www.cc-link.org/eng/t_html/confo.html. Also all other information how the test is performed, price and order document can be found at this web page.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Especially, for the ABS-CC-Link module where it is possible to choose different profiles depending on the application. Customer products using an AnyBus module for CC-Link that want to state that the product is certified must perform a test at one of the CC-Link test laboratories.

2.13 AS-Interface

All products that claim to be AS-Interface compatible must pass the test at a certified test site. The certified test laboratory for AS-Interface can be found at <http://www.as-interface.com/certification.asp>. Also more information how the test is performed and contact information can be found at this web page. Information of use of the AS-Interface trademark and the certification sign can be found at www.as-interface.com/trademarks.asp. HMS uses the test laboratory in Leipzig, Germany for testing of our AnyBus modules. After successful tests the test report are sent to the AS-International Association for final approval and registration.

The fact that the AnyBus module itself is certified does not automatically make all products using the AnyBus module certified. Customer products using an AnyBus module for AS-Interface that want to state that the product is certified must perform a test at the AS-Interface test laboratory.

3 Summary

Fieldbus Certification is an important approval for industrial communication products. Both to ensure compatibility between different products connected to the same network but also as a quality approval of the product.

HMS policy to certify our embedded modules make it possible for our customer to rely on the technology from HMS and safely take their product to fieldbus certification.

AnyBus modules are used in hundreds of different certified devices and if you have any questions about fieldbus certification, please contact any of our Technical Supports centres.