FOUNDATION™ DEVICE COUPLER REGISTRATION PROCESS

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1 Purpose

The purpose of this plan is to document the process and procedures a device coupler manufacturer shall complete to market their product as FOUNDATION™-registered.

2 Definitions

Device Coupler	A device coupler for H1 installations meeting one or more of the following device coupler application types.
Device Coupler Application Types	FOUNDATION Wiring Block (FWB): A wire termination block containing a minimum of one (1) trunk input, and one (1) spur output. Wiring blocks may contain surge protection circuits, an integral terminator, or indicating LED(s). Wiring blocks, for the purpose of this test specification, must not include spur short-circuit protection. FOUNDATION Device Coupler (FDC): A component part of an H1 fieldbus segment enabling connections of multiple field devices to the segment. Characteristically, the unit will have ports for Trunk In, Trunk Out and one or more Spurs, with the requirement that spur short-circuit protection must be included. Galvanic Isolation shall not be included. Foundation Device Couplers shall be network powered. Characteristics of an FDC may include surge protection, an integral terminator, or indicating LED(s). FOUNDATION Isolated Device Coupler (FIDC): A FOUNDATION Device Coupler that contains galvanic isolation between the trunk and the spurs. Spur short-circuit protection must be included. DC/DC conversion may be included. FOUNDATION Isolated Device Couplers may be separately powered.
Device Coupler Product Family	A product family is identified as multiple device couplers of a single device coupler application type constructed with the same components and having identical electrical characteristics. Each member of the device coupler product family may have a different number of spur connections. For example, one, two, and eight spur device couplers could be considered a product family so long as the electrical characteristics of the device remain unchanged other than the addition of support for more spurs.

3 Requirements Terminology

The following keywords define requirements levels as defined in RFC 2119.

MUST	This word, or the terms "REQUIRED" or "SHALL", means that the definition is an absolute requirement of the specification.
MUST NOT	This phrase, or the phrase “SHALL NOT”, means that the definition is an absolute prohibition of the specification.
SHOULD	This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
SHOULD NOT	This phrase, or the phrase "NOT RECOMMENDED" means that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
MAY	This word, or the adjective “OPTIONAL”, means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation that does not include a particular option MUST be prepared to interoperate with another implementation that does include the option, though perhaps with reduced functionality. In the same vein an implementation that does include a particular option MUST be prepared to interoperate with another implementation that does not include the option (except, of course, for the feature the option provides.)

4 Background

The FOUNDATION Device Coupler Registration Process is a new program designed to increase the physical interoperability of FOUNDATION physical layer infrastructure.

Device coupler manufacturers follow a standard set of tests detailed in the Device Coupler Test Specification (FF-846). The test results are documented by the manufacturer and submitted to the FieldComm Group.

FieldComm Group facilitated the Device Coupler Test Specification development through a team of volunteers comprised of several member companies who currently offer device coupler products.

5 Device Coupler Registration Policy

The use of the FOUNDATION Product Registration symbol in conjunction with a FOUNDATION-registered Device Coupler is the manufacturer's representation that a sample of the product has successfully completed all requirements specified in the FOUNDATION Device Coupler Registration Process.

The FOUNDATION Device Coupler Registration Process defines a series of test protocols for Device Couplers. Placing the Product Registration Symbol on a device coupler that has not completed the FOUNDATION Device Coupler Registration Process is a trademark violation.

6 Program Benefits

FieldComm Group will grant the following benefits when the device coupler under test successfully completes the FOUNDATION Device Coupler Registration Process.

6.1 Product Registration Symbol

FieldComm Group will grant the device coupler manufacturer the right to use the following Product Registration Symbol subject to the marketing standards defined in the Foundation's Graphic Identity Standards Guide.

Figure 1. Product Registration Symbol

6.2 Registration Certificate

FieldComm Group will issue the manufacturer a registration certificate documenting the device coupler under test. One registration certificate will be issued per product family. The certificate does not expire.

6.3 Web Catalog Registry

All FOUNDATION-registered device couplers that meet the current catalog requirements will be listed in an online web catalog at http://www.fieldbus.org. FieldComm Group reserves the rights to change the requirements for listings in the online catalog.

7 Device Coupler Registration Requirements

In order to advertise device couplers as FOUNDATION-registered, the following requirements must be met.

7.1 Intellectual Property License

The manufacturer must license the necessary intellectual property of FieldComm Group.

7.2 Specification License

The manufacturer must hold a current license and active maintenance agreement to FieldComm Group's Technical Specifications (FF-007).

7.3 Self Test Requirements

The device coupler manufacturer must complete a successful Device Coupler Self Test using the current version of the Device Coupler Test Specification (FF-846) for each device coupler or family to be registered.

The device coupler supplier must complete a test report based on the Device Coupler Test Specification Compliance Form (FF-847).

8 Device Coupler Registration Procedure

To complete the device coupler registration, the following steps must be completed.

8.1 Payment

The manufacturer must secure payment for the registration fees with a credit card or purchase order. See Section 12 for fee information.

8.2 Registration Kit

The manufacturer must contact FieldComm Group to obtain the Device Coupler Registration Kit. The Device Coupler Registration Kit will contain the current versions of the documents approved for registration. The Device Coupler Test Specification (FF-846) is available within FieldComm Group's Technical Specifications (FF-007).

8.3 Self Test Documentation

The manufacturer must complete a self test using the current version of the Device Coupler Test Specification (FF-846) against a representative sample of the device coupler. If the manufacturer is submitting a product family, then each member of the product family must be documented with the self test, but one test report can represent all available spur combinations. The manufacturer must complete a test report based on the current approved version of the Device Coupler Test Specification Compliance Form (FF-847) and submit it to FieldComm Group for review.

8.4 Test Report Audit

FieldComm Group will review the submitted documents required for registration. All applicable device coupler test cases must be completed successfully and documented in the Device Coupler Test Specification Compliance Form. Applicable device coupler test cases are determined by the documented application type.

9 Certificate Compliance

The Device Coupler Registration Certificate is valid for the device coupler identified on the certificate. A device coupler manufacturer that makes modifications to the device coupler must perform a new registration to continue to use the Product Registration Symbol and market the device coupler as FOUNDATION-registered.

10 Modifications to Registered Device Coupler

Only device couplers that complete the FOUNDATION Device Coupler Registration Process are authorized to claim they are FOUNDATION-registered and use the registration mark. Any change to the major product revision, electronic design, or current limit of the device coupler requires the manufacturer to complete the device coupler registration procedure described in Section 8 on the modified implementation. Non-electrical modifications, such as color, housing changes, connector type changes (screw, lever, threaded) or changes to the number

of supported spurs does not require the device coupler to complete a new registration procedure.

The device coupler is considered **MODIFIED** if any of the following are true.

1. The device coupler application type has changed. Each family of device couplers must support only one application type.
2. Electrical characteristics defined in the product definition (test 5.1 of FF-846) have changed.

The Device coupler would not be considered MODIFIED in the following examples.

1. Housing color has changed. Device couplers within a product family may have unique housing colors.
2. Number of supported spurs has changed. Device couplers within a product family may have support for a different number of spurs, where the spurs are electronically identical.
3. Connector hardware type has changed. Device couplers within a family may support different types of connection hardware (screw, lever, threaded).

11 Revisions to the Device Coupler Test Specification

All changes to the Device Coupler Test Specification must be approved by the Technical Steering Committee. All changes must use the Action Request Resolution Process (FF-548). Change requests can be made at the following URL: http://www.fieldbus.org/ar

No device couplers shall be registered to a given application type until at least two device couplers, developed by two different manufacturers, have successfully completed the requirements for that application type.

In the event that one manufacturer successfully completes the test requirements for a given coupler application type and no second manufacturer successfully completes a self-test against the same test requirements within six months, FieldComm Group shall contact the Technical Steering Committee for further action.

12 Registration to Prior Versions of the Test Specification

Manufacturers are encouraged to test against the latest version of the test specification. A manufacturer may select a prior version of the test specification to test and register for up to six (6) months after the release of a minor or maintenance version and up to twelve (12) months after the release of major version.

A manufacturer shall choose a test specification that validates the complete functionality of the coupler submitted for test and registration.

13 Registration Certificate Fees

The registration certificate fee applies to either a single device coupler or to a product family device coupler implementation.

The Device Coupler Registration Certificate Fee schedule is available at www.fieldbus.org/services.

14 Marketing Standards

FieldComm Group's Graphic Identity Style Guide (MT-041) specifies all marketing standards including guidance for using the Product Registration Symbol. Contact FieldComm Group at member.services@fieldbus.org for copies of this guide.

15 Registration Audits

FieldComm Group reserves the right to internally audit device coupler registration requirements.

The administrative audit is a FieldComm Group internal review to verify the device coupler is in compliance with the program requirements. FieldComm Group may contact the manufacturer via phone or email to verify compliance. FieldComm Group may request a sample to verify compliance with the registration requirements.

15.1 Registration Audit Fee

There are no fees associated with an administrative audit.

15.2 Registration Audit Notice

An administrative audit may occur without notice. All inquiries sent to the manufacturer must be responded to within ten business days.

16 Referenced Documents

ID	Document Title
FF-536	Foundation Device Coupler Registration Process (this document)
FF-846	Device Coupler Test Specification
FF-847	Device Coupler Test Specification Compliance Report (Template)
FF-548	Action Request Resolution Process
MT-041	Graphic Identity Standard

17 Document History

Date	FF-536 Version	Editor(s)	Changes to document
Nov. 17, 2008	1.0	Stephen Mitschke Heather Santos	Initial Release
May 8, 2012	1.1	Heather Santos Jay McEvers	Added definition for isolated device coupler in section 2 Added requirement for using current test report version in section 8.3 Clarified two vendor registration requirement for each profile type in section 11 Added section 12 to clarify that manufacturers can use prior versions of the specification for up to six months/1 year depending on minor or major release Sections 12-15 were renumbered 13-16 due to insertion of new section 12 Section 17 document history was added to track changes to this process Deleted column of version numbers for reference documents in section 16
Dec. 18, 2014	1.2	Jay McEvers	Updated for FieldComm Group initial release; no changes to the process.