ISA100Wireless Compliance Institute

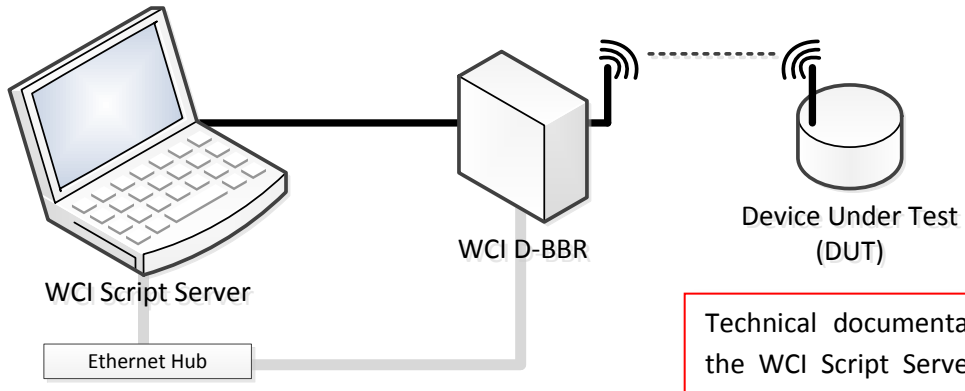
ISA100.11a Device Interoperability Test Kit

Description

The ISA100 Wireless Device Interoperability Test Kit (DTK) is a complete package that allows the user to ensure a manufacturer's device conforms to WCI's official ISA100 Wireless registration testing. This product will verify the correct communication behavior of a wireless device as defined in the ISA100.11a Standard. It is an excellent tool for troubleshooting, debugging, and regression testing of ISA100.11a products.

Features

- Ensures ISA100.11a device interoperability in native mode, in conjunction with ISA100.11a Stack Conformance Test Kit (STK).



Components

- Script Server (Linux machine)
- Test Scripts
- Diagnostic Backbone router (D-BBR)
- Reference Device Under Test (DUT)
- Ethernet Hub
- Documentation
- Technical Support for DTK setup and usage
- Part Warranty
- One (1) year

Technical documentation is preloaded on the WCI Script Server, also available as a download on WCI' GitHub portal, as well as via Centero, LLC.

For technical support please contact us at:

support@centerotech.com

centero

ISA100 Wireless COMPLIANT

About the ISA100 Wireless Compliance Institute

Comprised of industry leaders from major manufacturing and automation control system users and suppliers, the ISA100 Wireless Compliance Institute (WCI) was formed to decrease the time, costs, and risks of developing and deploying standards-based, industrial wireless devices and systems. WCI has established a collaborative industry-based program among users, suppliers, and other stakeholders that conducts independent testing and certification of wireless devices and systems; provides education, tools, and technical support to users and suppliers; accelerates adoption of the ISA100 standards; and assures interoperability. For more information about the ISA100 Wireless Compliance Institute, visit http://www.isa100wci.org.

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The ISA100 DTK Reference Device

The ISA100 Device Interoperability Test Kit (DTK) includes a reference device (SKU# VS210) that can be used as a DUT to validate that the DTK setup works fine. This validation consists of successfully running and passing the BLC test(s). The following figure depicts the basic features of the VS210:

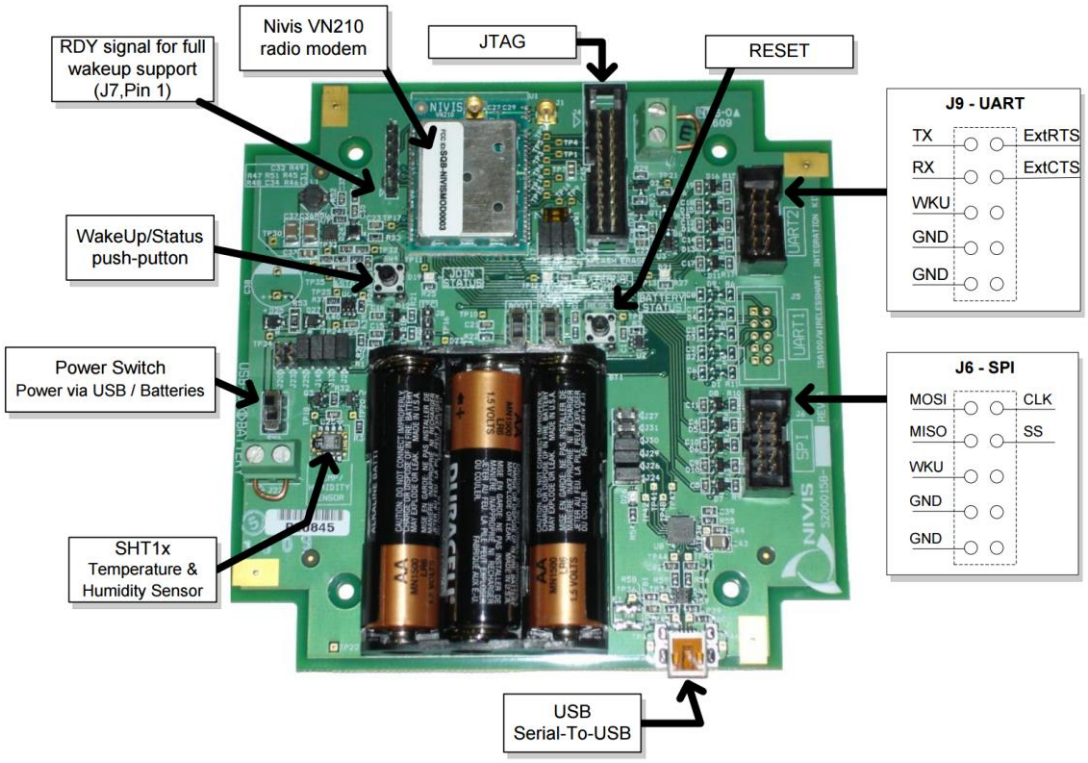

Figure 1: ISA100 DTK Reference Device (Nivis SKU# VS210)

Power ON: The reference device (VS210) can be powered from 3 x AA batteries, or via its mini-USB port from a USB power supply (not included). Select the appropriate power source from the Power Switch button, and then insert batteries or the mini/USB power cable. The device will automatically power on and begin scanning within 15 sec, for the wireless network. Status led lights will blink on the VS210 for approx. 30 seconds signaling that the device is running, then the LED lights will be turned off automatically to conserve energy. A short press on the WakeUp/Status button will temporary re-enable the LED lights signaling.

Provisioning: The current release of the ISA100 DTK, as well as the reference device, only supports Over-the-Air (OTA) provisioning at this time. In order to reset the VS210 to its provisioning default (factory default), press and hold its Status button for 10-12 seconds, then release the Status button. The VS210's LED lights will begin a fast blinking sequence and the device performs a soft restart into factory default state (ISA100 wireless net-id 0x0001).

DTK setup check using the Reference Device

In order to verify that your ISA100 DTK setup works fine and is ready for usage, please perform the following steps:

1. Connect the Script Server and the D-BBR devices via Ethernet cables to the provided network hub.
2. Power ON the Script Server and the D-BBR
3. Log in, into the Script Server (user: isa100 / password: isa100), and navigate to the folder that contains the WCI DTK applications. Read the included documentation, especially the DTK User Manual document).
   \home\isa100\WTK_Downloads\DTK_n.nn\Documents\
4. Power ON the Reference Device (see procedure on previous page).
5. Reset the Reference Device to Factory Default (see procedure on previous page).
6. On the Script Server, open a Terminal window and try to ping the D-BBR device to ensure that both D-BBR and Script Server can communicate via Ethernet
   ping 192.168.254.8
7. Open the configuration file named “ss.ini” and ensure that the Reference Device’s EUI-64 and IPv6 are correctly configured in the section “DUT1_*”:
   gedit \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\Config\ss.ini
   Example:
   DUT1_EUI64Add = **0022FF00000235CC**
   DUT1_IPV6Add = FE8000000000000**0022FF00000235CC**
   DUT1_16BITAdd = 0B01
   DUT1_16BITAdd_ExtDL = 0316
   Save and close the ss.ini file.
8. Navigate to \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\BLC\BLC\ and execute the BLC test(s):
   ./Execute_TP_Device.sh

Note: In preparation for the AL testing, the ss.ini file (see step 7 above) must be configured for your DUT, and your DUT shall pass steps (A) and (B) below before executing step (C):

A. BLC tests:
   \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\BLC\BLC\
B. Re-provision your DUT for the AL testing, by passing the JoiningScript test:
   \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\BLC\JoiningScript\
C. AL tests:
   \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\AL\Execute_AL_Device.sh
D. UDO UAP test:
   \home\isa100\WTK_Downloads\DTK_n.nn\Device_testKit\UDO_UAP\UDOTP1_Load\Execute_TP_UDO.sh