Q55 Zigbee PRO 2017 Golden Units

Reference Platforms for Zigbee PRO 2017

overview

The PRO 2017 Golden Unit devices cover all of the features and functions of the Zigbee PRO 2017 test specification inclusive of

Zigbee PRO Test Cases (basic)	Chapter 10
Additional Test Cases Based On Zigbee 2006 Compliant Platform Test Specification	Chapter 11
Additional Test Cases For Zigbee 3.0 (R21+)	Chapter 12
Additional Test Cases For R22+	Chapter 13
Parent and End Device Test Cases R22+	Chapter 14

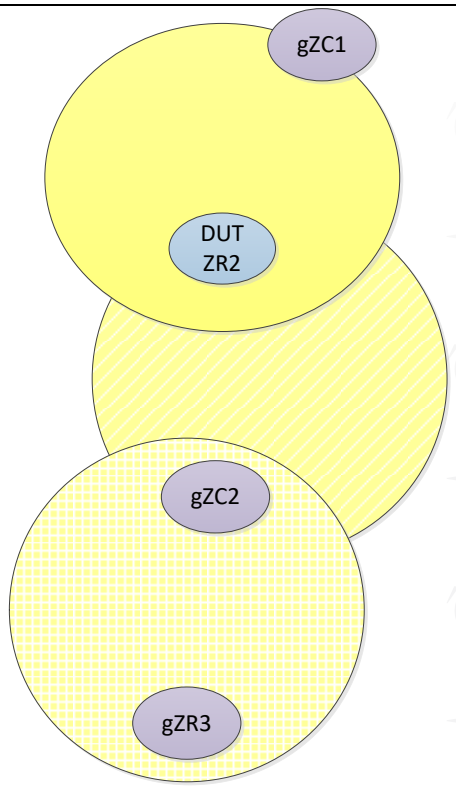
Covering 150 test cases, for which the Golden Units (GUs) function in all of the test harness rolls (gZC, gZR and gZED) depending on the details of the test case. The GUs, by function of being PR 2017 compliant, implement both 2.4 GHz and sub-GHz support and if acting as a coordinator or router can function in both bands simultaneously.

A typical test case scenario could be as depicted; which is taken from the setup for test "TP/PRO/BV-29 PanID conflict detection – ZR" The test verifies that when the 16-bit PANID is not a unique number there is a PANId Conflict. This test case is applicable to both Sub-GHz and 2.4 GHz interfaces.

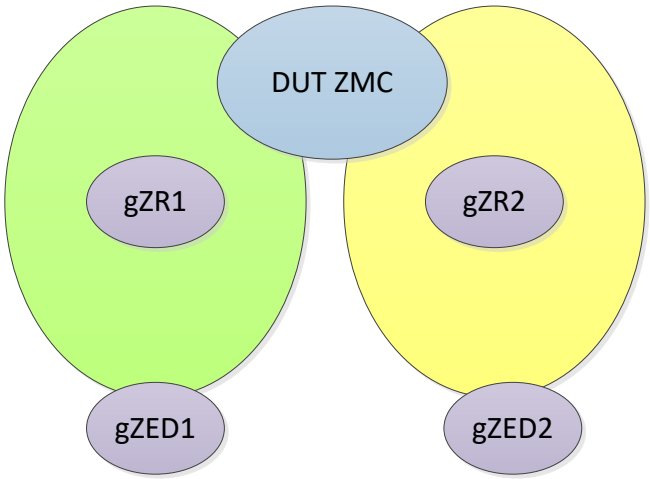
The attendant test steps are:

1. DUT ZR2 joins gZC1.
2. Set gZC2 under target stack profile, gZC2 as Coordinator starts a PAN with a PANId different from the PANID of DUT ZC1.
3. Assign the PanID of gZC2 to be the same as that of gZC1 by some means.

The Exegin Q55 GU device handle the various GU roles for all of the tests.



A typical dual band test as taken from the setup for test "TP/R22/SGMB-04 ZMC DUT unit with 2.4 GHz ZED Golden unit and with Sub-GHz ZED Golden Unit change channel on Sub-GHz and Sub-GHz device rejoin"
The test that the Multi-Band coordinator correctly forms a network and can communicate between end devices, switch Sub-GHz channel and end devices rejoin network, and buffer data successfully send between end devices after reforming network



The attendant test steps are:

1. gZMED1 – end device capable of joining DUT ZMC on Sub-GHz page 28 to page 31. End devices are RxOnWhenIdle=TRUE
2. gZSR1 – end device capable of joining DUT ZMC on Sub-GHz page 28 to page 31
3. gZED2 – end device capable of joining DUT ZMC on 2.4 GHz band. End devices are RxOnWhenIdle=TRUE
4. gZR2 – end device capable of joining DUT ZMC on 2.4 GHz band
5. DUT ZMC – a Multi Band coordinator capable of operating on the bands and associated channels of gZSR1, gZMED1, gZR2, gZED2

   The Exegin Q55 GU device handle the various GU roles for all of the tests.

benefits

- Based on Beaglebones these devices provide full Linux facility for device management. Ssh, scp for additions and updates. Command line shell scripting, TCP/IP connectivity through either USB or Ethernet etc.
- The Exegin PRO 2017 Zigbee stack provides a command line interface zbcli (Zigbee command line interface) that is accessible through a serial connection i.e. Linux and Windows are support as terminals
- The command line (zbcli) can be scripted to perform dedicated tests.
- A set of scripts are provided that allow users to run each of the test cases for certification.

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SPECIFICATIONS

- **SYSTEM REQUIREMENTS**
  - Console Interface: Windows XP, Windows Vista, Windows 7, Linux, OS X, and more
  - Virtual Serial over USB
  - SSH
- **DIMENSIONS**
  - Metric – 65mm W x 23.5mm L x 111mm D
  - Imperial – 2.55”W x 1.925” L x 4.4” D
- **WEIGHT**
  - Device – 105g / 4 oz.
- **POWERSUPPLY**
  - USB
- **ENVIRONMENTAL**
  - 0°C – 50°C operating
  - -40°C – 85°C storage
  - 95% maximum humidity, non-condensing
- **REGULATORYCERTIFICATION**
  - None, these are engineering units meant for test environments
- **WARRANTY**
  - 1 year parts and labour

FEATURES

- **NETWORK**
  - 10/100 Ethernet port
  - 2.4GHZ and sub-GHz 802.15.4 radios
  - External antennas (RP-SMA male)
- **PROTOCOL**
  - Zigbee PRO 2017
  - Zbcli over serial

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