



## Packetcraft Controller Tester

## Product Brief

### Highlights:

- Bluetooth 5.4 HCI and link layer qualification test suite
- Software test tool supporting thousands of test cases using readily available low-cost Bluetooth hardware
- Test suite for 802.15.4 MAC certification (option)
- Perform automated CI testing

### Applications:

- Link layer testing by software developers and system test engineers
- CI testing
- An essential tool aiding the development of:
  - All types of Bluetooth LE devices such as wearables and IoT
  - Bluetooth LE Audio including hearing aids, earbuds, talking sensors, microphone, speaker, and audio source devices as well as Auracast™ broadcast audio infrastructure

### Contact:

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### Protocol Tester with CI Integration

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Packetcraft Controller Tester is a versatile and powerful software tool offering both protocol testing and tools for Continuous Integration (CI) supporting Bluetooth LE 5.4 including PAwR, 5.3 & 5.2, and 5.1 & 5.0.

The tool tests the Bluetooth link layer and optionally the 802.15.4 MAC via the standard Bluetooth HCI interface. This custom Python-based tool, originally developed by Packetcraft's engineers for internal development and validation, offers several thousand test cases including hundreds of unique test cases for qualification, protocol feature, robustness, soak, and system testing.

The companion software test tool to Packetcraft Controller, Packetcraft Controller Tester can validate a port of Packetcraft Controller to a target silicon platform. As a standalone software test tool, it can interface to and test any Bluetooth Low Energy chip with a standard HCI interface and runs on commercially available low-cost Bluetooth hardware.

CI tools implement an example software development flow with package, test, analyze, & publish.

### Packetcraft Controller Tester Features

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- Approximately 2,000 test cases for qualification including custom tests for feature, robustness, soak, and system testing
- Test harness that configures physical fixture, configures runtime parameters, and manages logging
- Connects to target device via UART HCI
- Can integrate into software development flow for CI; includes example flow
- CI test tools written in Python and Bash are adaptable to 3rd party CI software (GoCD, Bamboo, Jenkins, etc.)
- Customizable test scripts written in Python
- Runs on Linux, Mac, or Windows 10 with WSL

## Packetcraft, Inc

With several hundred million devices enabled, Packetcraft continues to deliver a legacy of extensively used and well-tested embedded software and protocol stacks for Bluetooth Low Energy.

Packetcraft prides itself on both efficient design and achieving first-to-market qualifications which help ensure their customers are at the leading-edge for product innovation and distinction.

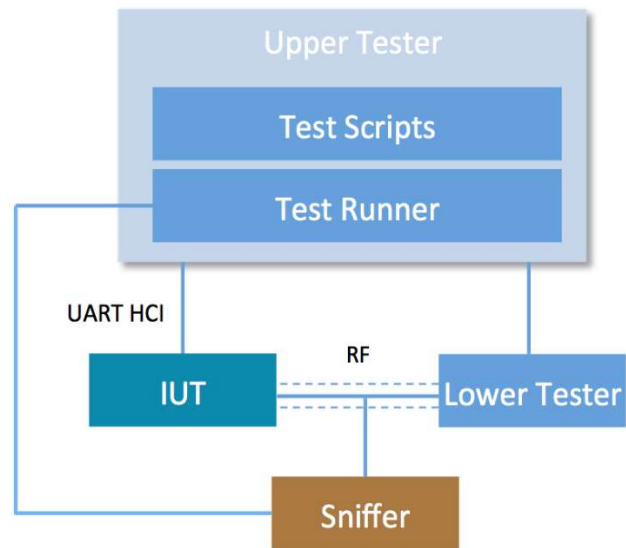
Packetcraft's leadership in Bluetooth LE began in 2009 with the founding of Wicentric, continued through Arm's ownership in 2015, and is maintained today as new technological innovations such as LE Audio, PAwR, and Channel Sounding come to market.

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## Controller Tester Block Diagram



- Upper Tester: Test harness executing on a PC interfacing to the IUT, Lower Tester, and Sniffer; executes test cases and logs results
- Lower Tester: Special build of Packetcraft's HCI Controller firmware with capabilities to operate out-of-spec and perform negative testing. Runs on readily-available low-cost hardware\*
- IUT: HCI controller device firmware under test. Connected to upper tester via UART HCI
- Sniffer: Protocol sniffer integration for logging\*

\* Lower tester hardware and protocol sniffer not included

## Deliverables

- Upper Tester test harness Python source code
- Lower Tester executable binary for Nordic Semiconductor nRF52
- Link layer and HCI test scripts Python source code
- 802.15.4 MAC test scripts Python source code (optional add-on)
- CI Tools example scripts Python and bash source code
- User's guide