

The Center for Cyber Defenders

Expanding computer security knowledge

Continuous Integration and Testing

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Problem Statement:

Device development and testing is a never ending process that benefits from a test bed that can emulate its actual operational conditions as close as possible while monitoring system performance.

These projects seek to add two new features to the existing test bed:

- Continuous power logging
- Iridium satellite communication

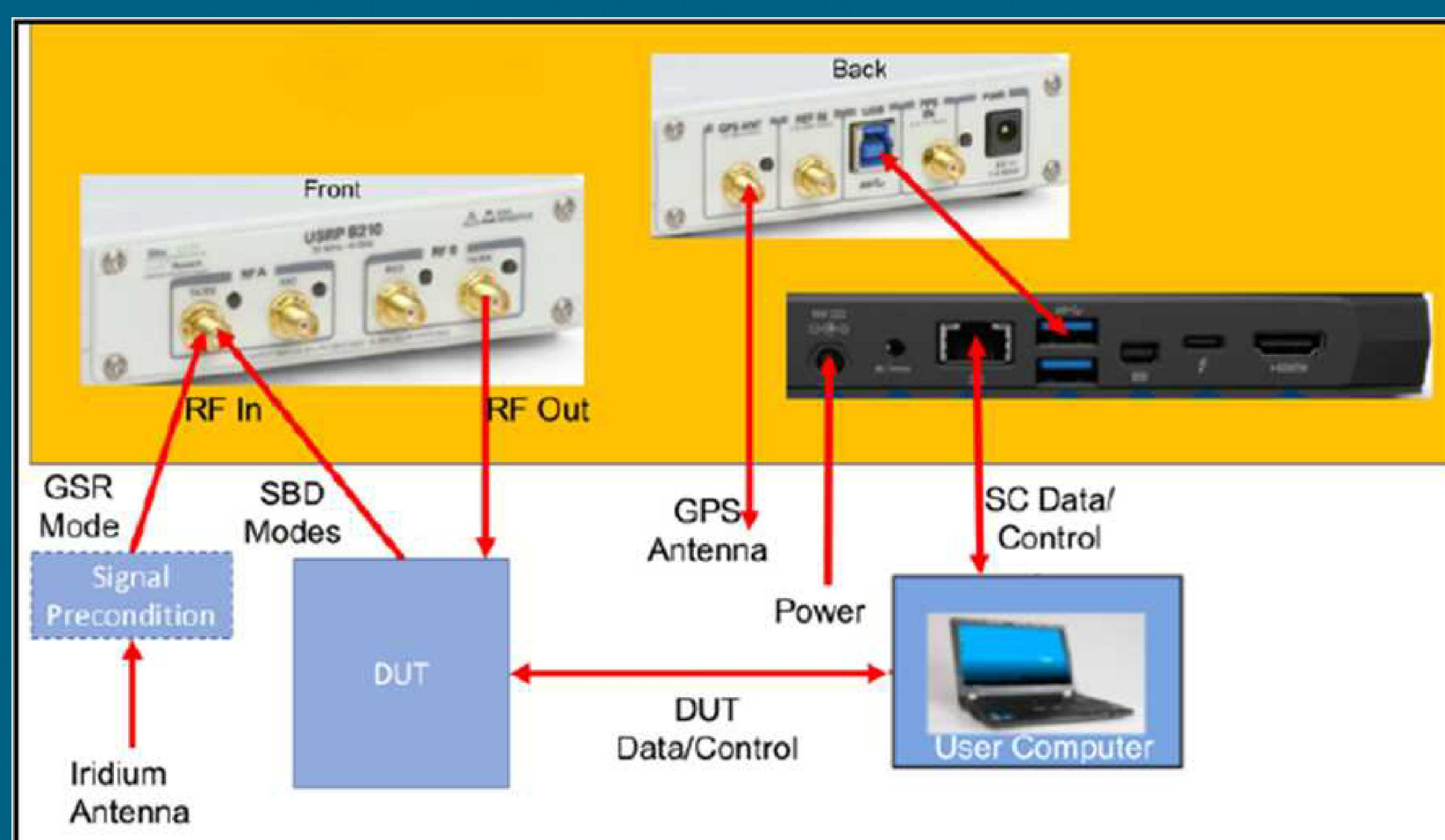
Objectives and Approach:

A satellite simulator will be added to the test bed to better simulate actual communication between the system under test and the Iridium satellite constellation. The simulator must be controlled through ethernet.

A power analyzer bank is used to measure power consumption of the device under test (DUT). The power analyzers will be automated and the results integrated into the test bed.

Results:

The satellite simulator is able to control and schedule Iridium messages to DUT. Power Analyzer automation was accomplished allowing for fully remote configuration and data collection through existing network infrastructure.



Impact and Benefits:

The satellite simulator can be used to run tests with the DUT as if it were outdoors with a view of the satellite constellation. The Power Analyzer system can now measure voltage, current, and power with little change to existing infrastructure and process. The files generated are able to be used in existing Keysight software making inspection easier.

