

Frontline® TLF3000®

Bluetooth® Low Energy RF-PHY Tester



Key Features and Benefits

- Compliant with all adopted Bluetooth LE core specifications (4.0, 4.1, 4.2 and 5.0)
- Support for all Bluetooth LE test cases in LE RF-PHY spec
- Generates all four signals required to execute LE PHY test cases
- Eliminates the need for multiple pieces of test equipment
- Fast - 2 second boot time
- In-band emissions test completes in 2.5 ms
- Fully configurable test coverage and test time
- Performs RF-PHY testing on live links
- Signal generation and analysis in one package
- Simple and intuitive GUI quickly identifies faults
- Standalone mode - test scripts can reside on a USB drive
- Export reporting results to HTML, XML, CSV, and raw data
- Python + C API available for production environment

The Frontline TLF3000 is an ideal solution for production testing, design validation, use in the lab, or use at the repair station. The TLF3000 is easy to use, and enables developers to optimize their design and take their devices to production and to get to market first with a thoroughly tested product.

The TLF3000 is a single box, highly portable, Bluetooth RF-PHY tester that can execute all of the RF PHY tests for all of the Bluetooth low energy technologies (4.0, 4.1, 4.2 and 5). Its support for Bluetooth 5 RF-PHY test cases includes:

- 2Mbps speed
- 1Mbps speed
- Coded PHYs
- AoA / AoD signal generation

The TLF3000 provides accurate power control to -115dBm for coded PHY tests, full support for in-band emissions, and lightning speed (boots in 2s boot time, and in-band emissions test completes in 2.5ms). C/I, blocking and intermodulation signals are generated internally - the TLF3000 offers extensive coverage with no additional test equipment.



True OBT Solution

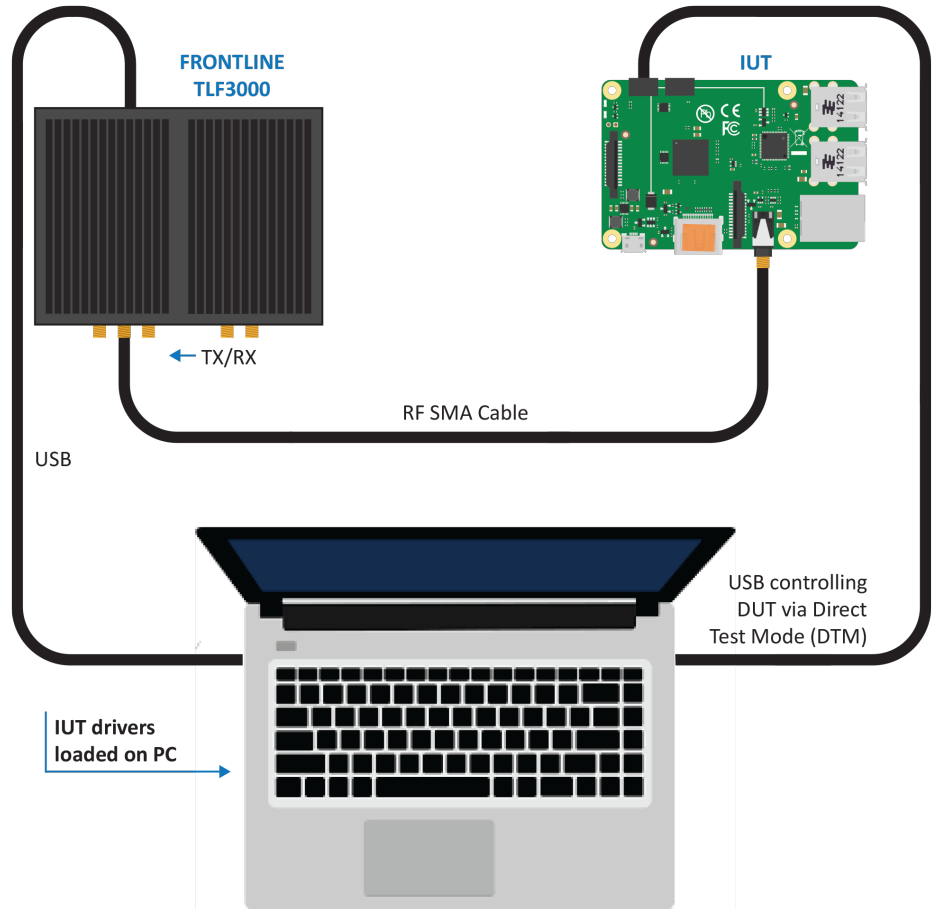
A significant barrier to speed to market has traditionally been the daunting range of test equipment needed for thorough testing of the RF interface. With one portable package, the TLF3000 negates the need for multiple pieces of RF test equipment:

- PHY Tester to provide scripted support for all Bluetooth LE test cases in LE RF-PHY spec
- Signal Generator to create complex composite test signals
- Signal Analyzer for off-air or conducted detailed waveform analysis
- Advertiser/Scanner to provoke and test device without serial interface
- Standalone for host-independent (no PC required) test scripting on USB drive

The TLF3000 captures and analyzes the entire 2402-2480 MHz ISM band, can generate arbitrary waveforms occupying the band 2395-2485 MHz with a maximum peak level of 0 dBm, and includes a CW signal generator covering 25MHz to 6GHz with an output level of -50 dBm to -28 dBm.

Specifications

- **Supported Bluetooth Specifications**
Bluetooth LE (4.0, 4.1, 4.2, 5)
- **Supported Host OS**
Windows 7 and Windows 10
- **Host Interfaces**
USB
- Connector type: Micro-USB
- Speed Rating: High Speed
- VBUS Load: 2.2 μ F, > 10 k Ω
Ethernet
- Connector type: RJ45
- Speed: 10 / 100 / 1000
- **DUT Interfaces**
Direct test mode
H4
H5
BCSP
HCI commands via host
- **Input Power**
- Connector type: 2.5 mm jack
- Input voltage: 12 V DC
- Power: 10 W typ (application dependent)
- Reverse polarity protection: Yes
- Over voltage protection: Yes
- Under voltage protection: Yes
- **Dimensions**
158.5 mm x 160.0 mm x 47.0 mm (6.3" X 1.9" X 6.3")
- **Weight**
1.3 kg (2.87 lb)
- **Operating Temperature**
0°C to 40°C
- **Humidity**
0% - 90% (0 °C – 35 °C), noncondensing



Typical Testing Configuration

TX/RX Port

Function	Low sensitivity 2.4 GHz RF input and signal generator output / Suitable for conducted measurements
Connector Type	SMA
Impedance	50 Ω
Coupling	AC
Maximum DC Voltage	50V

Receiver Specification for TX/RX Port

Noise figure	4.6 dB typ
IP3 @ max sensitivity	+47 dBm typ
SNR in 1MHz bandwidth	80 dB typ
Maximum input signal	27 dBm
Maximum usable signal	27 dBm typ
Frequency range	2401-2481 MHz

Ordering Information

Product Description

Frontline TLF3000 Bluetooth LE RF-PHY Tester

Product Code

2014-5000-000

To order or for more information:

www.fte.com
frontline_onlinesales@teledyne.com
1.800.359.8570 US & Canada
+1.434.984.4500
Fax: 434.984.4505



TELEDYNE LECROY
Everywhereyoulook™