RFcreations
...a different perspective

The moreph software defined radio at the core of our products offers a new perspective for signal measurement, analysis, and generation. A two second boot time, compact footprints, and futureproofing via the use of applications to provide defined feature sets. This allows moreph to evolve from a packet sniffer to a PHY layer tester, to a real-time spectrum analyser with a simple download, you only purchase what you need when you need it!

mini-morephc. capture

Everything, Anywhere, at Any time!
Industry's first Android application for capture of the entire 2.4GHz ISM band. Ultimate portability in the palm of your hand! Simple way to make a capture and share the file to others or a PC to perform detailed analysis in blueSPY.

morephcs. channel sounding

Channel Sounding Physical Layer RF Tester. Validate your implementation now! Used at the BT SIG Channel Sounding IOP Sessions

mini-moreph.

The world's smallest USB powered wideband Protocol Analyser.

moreph30.

A wideband 2.4 GHz signal analyser and generator. Includes a full bandwidth, high dynamic range transmitter, wideband CW source. The moreph30's ultra linear receive and transmit chain will ensure that you never miss a packet!

morephE. etherstore

A RF record/playback option for the moreph30, adds the capability to record and playback the entire 2.4GHz ISM band. Exactly what you need for RF site surveys, spectrum planning, interoperability, and receiver testing.

mini-moreph.

The smallest USB powered protocol analyser on the market! 90mm x 78mm x 20mm and only 110g! Wideband capture of the entire 2.4GHz ISM band. Truly portable sniffing with autonomous capture mode, put it in your pocket today!

blueSPY.

The world's ONLY concurrent multi-standard wideband protocol analyser, blueSPY can be used on both the moreph30 and mini-moreph hardware platforms. With a simple to use UI and support for Windows, macOS and Linux it is the only protocol analyser that you will ever need!

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GOPALAM EMBEDDED SYSTEMS
www.embeddedsingapore.com

blueSPY. Key features

- ✓ The world's ONLY Protocol Analyser, with concurrent capture of:
  - Classic Bluetooth® (BR/EDR)
  - Low Energy Bluetooth
  - **Qualcomm®** Bluetooth High Speed Link (QBHSL)
  - MediaTek mHDT V1.0
  - IEEE 802.15.4
  - Customized PHY capability on request
- ✓ Channel Sounding Ready!
- ✓ Support for Windows, macOS and Linux.
- ✓ WiFi packet detection across 13 channels simultaneously.
- ✓ **TRUE WiFi PACKET TIMING**: all packets, including WiFi, are timestamped accurately by the Moreph SDR.
- ✓ Choice of hardware platforms: moreph30 or mini-moreph.
- ✓ Simple to use, familiar UI.
- ✓ Advanced filtering options to find the packets you want. Filter by device, protocol, PHY, or with arbitrary search queries.
- ✓ Integrated summary view can show any combination of protocols and PHYs together.
- ✓ Spectrum view shows packets and background power.
- ✓ **AUTONOMOUS CAPTURE** mode for truly portable sniffing.
- ✓ Live or post-capture decryption.
- ✓ All captured packets tagged with RSSI and Frequency offset/tolerance.
- ✓ HCI-UART, HCI-SPI capture and decode.

Bluetooth® traffic generator

The Bluetooth® 5.3 traffic generator application for the moreph30 is capable of simultaneously generating a multitude of BR/EDR/LE signals. The signals may be placed on arbitrary channels and may overlap on the same channel. Each signal is fully parameterised in terms of its transmission time, channel, power, contents, and RF distortions. Data defining the scenario to be generated is downloaded to the moreph30 in the form of a csv file. The file can either be generated using the GUI or a spreadsheet application. The application includes automatic preamble, sync word, CRC and whitening generation to aid packet definition. The moreph30 can either be operated from a controlling host or run standalone with the scenario definition being read from a USB memory stick.

Bluetooth® LE RF tester

The Bluetooth® LE RF tester application for the moreph30 can perform all the tests set out in the Bluetooth® Radio Frequency Physical Layer test specification without the need for external test equipment, with some minor limitations. Where no physical connection to the device under test is possible, the application can utilise advertise and scan packets to provoke a response from the device and perform both transmitter and receiver testing. The application can also analyse packets on a live link as well as acting as a signal generator capable of producing both wanted and interfering signals simultaneously.

- ✓ Support for all BT 5.3 RF-PHY test cases.
- ✓ Extensive coverage with no additional test equipment.
- ✓ C/I, blocking & intermodulation signals generated internally.
- ✓ Accurate power control to -115dBm for coded PHY tests.
- ✓ Full support for in-band emissions
- ✓ Full support for Bluetooth® 5 low energy features.
- ✓ 2Mbps speeds.
- ✓ Coded PHYs.
- ✓ AoA/ AoD.
- ✓ Fast.
- ✓ In-band emissions test completes in 2.5ms.
- ✓ 2s boot time.
- ✓ Advertise and listen on multiple channels simultaneously.
- ✓ Simple control via comprehensive GUI or Python/C dll.

Bluetooth® BR/EDR RF tester

The Bluetooth® BR/EDR RF tester application for the moreph30 Can perform all the tests set out in the Bluetooth® Radio Frequency Physical Layer test specification without the need for external test equipment, with the exception of out-of-band blocking. Moreph30 can act as a signalling tester, with full control of the device under test (DUT) over-the-air. It can also be used in a non-signalling mode, analysing packets transmitted by the DUT, as well as generating both wanted and interfering signals simultaneously for reception by the DUT.

- ✓ Support for all BT 5 RF-PHY test cases.
- ✓ Extensive coverage with no additional test equipment.
- ✓ C/I and intermodulation signals generated internally.
- ✓ Accurate power control to -115dBm.
- ✓ Full support for spectral tests.
- ✓ Fast.
- ✓ 2s boot time.
- ✓ Rapid connection to device under test.
- ✓ Inquiry and page packets transmitted on multiple channels simultaneously.
- ✓ Receiver listens on all channels simultaneously.
- ✓ Dedicated parallel processing.
- ✓ Simple control via comprehensive GUI or Python/C dll

Bluetooth® LE Advertise and scan simulator.

The Bluetooth® advertiser simulator and monitor for the moreph30. The application can listen on all primary and secondary advertising channels simultaneously. This greatly reduces test time when the morephe30 has been configured as a scanner.

- ✓ Act as a Bluetooth® advertiser capable of generating extended advertising and periodic advertising events.
- ✓ Act as a Bluetooth® scanner capable of requesting advertising data from legacy or extended advertising packets.
- ✓ Act as a Bluetooth® sniffer capable of decoding legacy advertising, extended advertising and periodic advertising events and associated scan requests.
- ✓ Generate statistics on the number of scannable packets, the number of scan requests and the number of successfully elicited scan responses..