

FTS4BT™

Wireless Sniffer for *Bluetooth*® Technology

NOW SUPPORTS V2.1 + EDR

World's First Bluetooth v2.1 + EDR Analyzer: Now Sniffs High Speed UART

Bluetooth Challenges

► Complex & Ever Changing

Bluetooth wireless technology is an extremely complex software and hardware technology that is evolving fast. If you are new to *Bluetooth*, just getting a good understanding of how it works is a large task. But even the most experienced *Bluetooth* developers and test engineers are challenged by keeping up with the latest changes from the baseband all the way to the profile level.

► Interoperability

There are now enough *Bluetooth*-enabled devices on the market to prove that the technology is viable. Commercial success is tied to making sure that your devices interoperate smoothly so consumers can realize the benefits of *Bluetooth* technology.

FTS4BT Meets the Challenge

Developers and test engineers rely on FTS4BT to get them through the design, debug, test, verify, and qualification cycle. Our users tell us their products would have never made it to market in a timely fashion without it. No matter where you are in the *Bluetooth* chain, you will find invaluable features in FTS4BT.

**SUPPORTS EDR
(Enhanced Data Rate)**

FTS4BT is the only analyzer currently on the market to support Bluetooth v2.1 + EDR.

Synchronized Air & HCI Sniffing: Live!

We have learned through extensive experience supporting our customers that many problems are most effectively debugged live, using multiple points of observation.

Sniff HCI 6 Ways: Externally

By tapping the ① serial or ② USB* HCI interface between a host CPU and a host controller.

Internally

By spying on the ③ serial or ④ USB HCI interface between a host CPU and a host controller.

Virtually

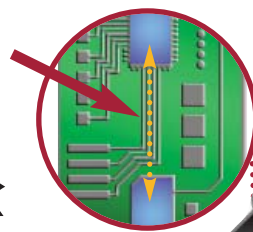
⑤ Via the Live Import API which enables any application to feed data into FTS4BT.

Off-Line

⑥ By loading BTSnoop log files that can be created when it isn't convenient to do live analysis.

HCI Sniffing

By tapping the HCI interface between a host CPU and a host controller.

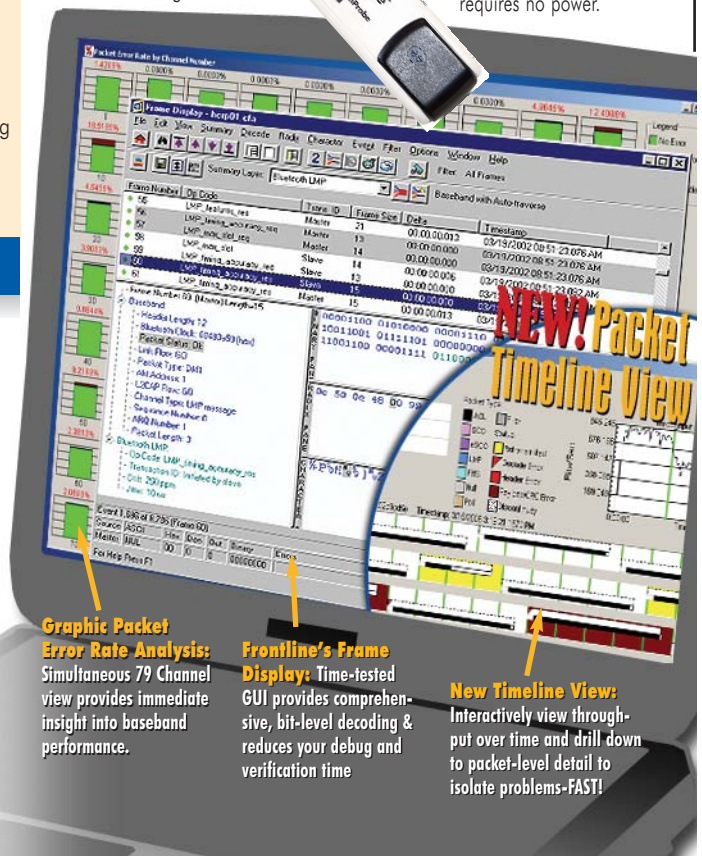


& Simultaneous Air Sniffing



FTS4BT users love bringing their ComProbes to Bluetooth UnPlugFests!

Finger-sized *Bluetooth* ComProbe® Hardware is incredibly portable and requires no power.



Graphic Packet

Error Rate Analysis: Simultaneous 79 Channel view provides immediate insight into baseband performance.

Frontline's Frame

Display: Time-tested GUI provides comprehensive, bit-level decoding & reduces your debug and verification time

New Timeline View:

Interactively view throughput over time and drill down to packet-level detail to isolate problems-FAST!

Debug, Test, & Verify Fast with FTS4BT



- **Synchronized air and HCI sniffing:** FTS4BT provides multiple points of observation, speeding up debug, test, and verification time. Sniffs air plus HCI 6 ways.
- **Works in Real-time:** Captures, decodes, filters and displays data, and detects protocol errors (indicated in red) simultaneously, all live and in real-time to find and fix problems fast.
- **Decodes all Bluetooth protocols and most profiles** allowing for thorough interoperability testing.
- **Quick release of new profiles** to keep pace with changing *Bluetooth* specifications.
- **Extract Audio into WAV files: Supports A2DP, HSP & HF Profiles.** Playback for rapid quality check or perform a more detailed analysis.
- **Includes Frontline's FrameDecoder™** technology for swift development and seamless integration of HCI Vendor Extensions and other custom protocol implementations. FrameDecoder is how we meet ever-changing *Bluetooth* technology challenges—and now so can you!

Optional HCI Sniffing ComProbes

If your embedded device utilizes a high speed UART HCI interface between the host CPU and the host controller you can tap that connection with the Embedded Bus ComProbe and sniff H4, H5, and BCSP links at speeds up to 8M bits/sec.



For USB HCI connections, use the USB ComProbe.

The Frontline Edge

Outstanding Technical Support

Whether you need help using a basic FTS4BT product feature, want Frontline's explanation of the protocol stack, or have a question on using FrameDecoder to write a decode, you can be assured of a response that is friendly, thorough, and timely.

Trusted Bluetooth Expertise

The Bluetooth SIG (the governing body of Bluetooth technology) has selected Frontline to provide world-wide technical support for the SIG's Profile Tuning System (PTS) test tool. PTS is the cornerstone of the Bluetooth product qualification program.



Unequaled Protocol Analysis Experience

Frontline is a proven protocol analyzer industry leader since 1985. FTS4BT is a member of the growing family of Frontline Test System® (FTS®) protocol analyzers, each of which incorporates our time-tested user interface and the FrameDecoder protocol-decoding engine. FTS analyzers support serial, Ethernet, Bluetooth, USB, ZigBee™ and numerous industrial protocols and buses such as Modbus, DH+, and DeviceNet.

Free Premium Maintenance

With FTS4BT not only will you receive free software, firmware, and protocol decoder upgrades for one year, but you will also receive free or low-cost air sniffing hardware upgrades. After a year, it is inexpensive to keep your Premium Maintenance current. Bluetooth technology moves fast—with Frontline products, so can you!



FTS4BT: Built for Bluetooth Troubleshooting

Air Sniffing

- ▶ **Supports v2.1 + EDR**
- ▶ Automatically handles decryption, pairing, master/slave role switches, and park, hold, and sniff low power modes.
- ▶ Excellent piconet synchronization using master inquiry, slave inquiry, or passive slave page.
- ▶ **Basic sniffing**—up to seven slaves in one piconet all on the same frequency hopping sequence.
- ▶ **Advanced sniffing** (requires one or more optional additional Bluetooth ComProbes)—**Mixed piconets** (multiple frequency hopping sequences in one piconet). **Scatternet** (multiple piconets). **Redundant** (for improved packet reception).

User Interface

- ▶ Familiar tree (Explorer style) protocol decode display with single-click protocol filtering.
- ▶ Decodes and displays multiple protocol layers of multiple data packets simultaneously.
- ▶ Detects and displays protocol errors (in red) in real-time.
- ▶ Session notes and annotated bookmarks allow for quick identification of questionable packets.

Detailed Decodes

- ▶ TCP/IP support comparable to an Ethernet analyzer. Decodes all key Dial-Up Networking and TCP/IP protocols.
- ▶ **Transports:** HCI USB (H2), HCI UART (H4), HCI Three-Wire UART (H5), BCSP
- ▶ **Protocols:** Baseband, LMP, HCI, L2CAP, SDP, RFCOMM, TCS Binary, OBEX, AVCTP, AVDTP, BNEP, AT Commands, CMTD, HDLC, PPP, TCP/IP
- ▶ **Profiles:** **Audio Visual:** A2DP, AVRCP, GAVDP, VCP, VDP. **Car:** HFP, PBAP, SAP. **Printing:** BIP, BPP, HCRP. **Other:** CIP, CTP, DUN, FAX, FTP, GOEP, HID, HSP, ICP, LPP, OPP, PAN, SDAP, SPP, SYNCH, UDI

Additional Features

- ▶ Continuous direct logging to disk with unlimited file size.
- ▶ Counts retransmitted packets.
- ▶ Export into CSV and other formats.
- ▶ Data extraction into original file formats. For example, PDF.
- ▶ Graphic display of Packet Error Rate.
- ▶ Audio extraction into WAV files.
- ▶ Reads BTSnoop files.

Typical FTS4BT Users

- ▶ **Chips CSR (their corporate standard)** • Broadcom • Infineon • RFMD • QUALCOMM • TI
- ▶ **Mobile Phones/Headsets** Nokia • Sony Ericsson • Kyocera • Siemens Mobile • Jabra • Motorola • Sprint • Nextel • Cingular • Orange
- ▶ **Software, Stacks, & BQTFs** Microsoft • Extended Systems • Symbian • Open Interface • RFI • Canon i-tech • 7 Layers • Teleca • CETECOM
- ▶ **Automotive** Audi • DaimlerChrysler • Johnson Controls • Delphi • BMW • Nissan • Temic • VW • Harman/Becker • Toyota • Ford • Visteon
- ▶ **Electronics** Panasonic • Hitachi • GE • Alps • Symbol Technology • Intel • HP • Siemens • Sony • Sanyo • Epson • Toshiba • Canon
- ▶ **Aerospace & Defense** NASA • Lockheed Martin • U.S. Dept. of Defense • Northrop Grumman

Minimum PC Requirements

- ▶ 1GHz Pentium PC or equivalent
- ▶ Windows XP
- ▶ 512 MB RAM
- ▶ 50 MB free disk space
- ▶ USB port for basic air sniffing
- ▶ One additional USB port for each additional Bluetooth ComProbe
- ▶ USB 2.0 port for optional USB ComProbe
- ▶ Serial HCI Sniffing: For RS-232 data at speeds up to 921.6K bps - Monitor one or two serial ports using included cables