

# frontline



# BPA® low energy

## BLUETOOTH® PROTOCOL ANALYZER

The Frontline BPA low energy Protocol Analyzer includes powerful Frontline software and the BPA low energy hardware interface.

### Key Benefits

- Analyze NOW - see events as they occur** through live decoding and decryption of encrypted data
- Extraordinarily portable size and USB-powered** make this the perfect tool for bench or field
- No Hassles Decoding** - features simple device setup for developers of *Bluetooth Smart* and *Smart Ready* technologies - just plug into the USB port and go!
- Excellent Value**  
Tailored specifically to low energy analysis, the Frontline BPA low energy features maximum value for the money
- Industry-best Decodes**  
*Bluetooth* decodes that make for reliable development and problem-solving
- Maximum Flexibility**  
DecoderScript lets you specify decodes for custom protocols
- Faster to Market**  
Reduces debug time with simultaneous live capture, display, decode, filtering and detection of protocol errors
- Support for CSRMesh and *Bluetooth* mesh technology**

Bluetooth low energy wireless technology is rapidly changing how the wireless world connects. Consuming only a fraction of the power of Basic Rate/Enhanced Data Rate (BR/EDR) *Bluetooth* wireless technology, *Bluetooth* low energy (*Bluetooth* Smart technology) will allow hundreds of millions of new wireless devices to interoperate within the *Bluetooth* ecosystem. From watches, sports and fitness devices, to wellness, healthcare and more, *Bluetooth* Smart technology is expected to greatly accelerate the wireless evolution.

### Tiny Footprint, Huge Tracks

In an increasingly mobile world, it's more important than ever that developers' tools are just as mobile as the devices and technologies they're creating. Frontline puts problem-solving literally in the palm of your hand with the Frontline BPA low energy *Bluetooth* Protocol Analyzer.

Smaller than a deck of cards and running on USB power, the Frontline BPA low energy packs a serious punch, decoding all traffic including advertising packets, data packets and LL control packets, and providing visibility into all three advertising channels concurrently, even before the connection is established. A single BPA low energy follows multiple connection requests from the same master to capture the resulting connections.

But powerful tools don't have to be hard to use. With the Frontline BPA low energy, setup is easy and requires no synchronization to devices - just start capturing. Working with custom protocols? No problem. The BPA low energy includes DecoderScript, which allows specifying decodes for custom protocols.

The Frontline BPA low energy *Bluetooth* Protocol Analyzer is the first name in portable, USB-powered, and affordable *Bluetooth* low energy analysis, and features the rich decoding toolset represented by the powerful software at the core of our Frontline family of developer-class protocol analysis products.



Frame Display - Nordic Dev Kit.cfa

File Edit View Format Filter Bookmarks Options Window Help

Frame 383. Len=25

LE BB:

- CP #1
- Event Index: 21 - 2405 MHz
- Master Preferred Filter Criteria for BT low energy devices: No
- Decrypted by Analyzer: No
- Event Status: Everything was ok.
- PDU Length: 12

LE PKT:

- Preamble: 0x05
- Address: 0x03801bb
- CRC: 0x252620

LE DATA:

- L2CAP:
  - PDU Length: 6
  - Channel ID: 0x0004 (Attribute Protocol)

ATT:
 

- Role: Slave
- Signature Present: No
- PDU Type is Command: No
- Opcode: Read Response
- Value: 0x0000000000000000
- SlaveHandle: 15
- StartHandle: 15
- Characteristic: 0x0000000000000000

Characteristic Definition:
 

- Properties:
  - Authenticated Properties Permitted: No
  - Authenticated Signed Writes Permitted: No
  - Indicate Permitted: No
  - Notify Permitted: No
  - Write Permitted: No
  - Write Without Response Permitted: No
  - Encryption Key Availability: Yes
  - Encryption Permitted: No
  - Value Handle: 16
  - UUID: Battery Power State

Frame# Role Opcode Handle UUID Database Error code Frame...

Frame#	Role	Opcode	Handle	UUID	Database	Error code	Frame...
321	Master	Read Request	6	Characteristic	d389fb65	22	(
324	Slave	Read Response	7	Peripheral Preferred Connection Pa...	d389fb65	25	)
325	Master	Read Request	7	Peripheral Preferred Connection Pa...	d389fb65	22	(
328	Slave	Read Response	7	Peripheral Preferred Connection Pa...	d389fb65	28	)
331	Master	Read Request	8	Primary Service	d389fb65	22	(
334	Slave	Read Response	8	Generic Attribute Profile	d389fb65	22	)
337	Master	Read Request	9	Primary Service	d389fb65	22	(
340	Slave	Read Response	9	Glucose	d389fb65	22	)
343	Master	Read Request	10	Characteristic	d389fb65	22	(
346	Slave	Read Response	11	Glucose Measurement	d389fb65	25	)
347	Master	Read Request	11	Glucose Measurement	d389fb65	22	(
350	Slave	Read Response	11	Glucose Measurement	d389fb65	22	)
355	Master	Read Request	12	Characteristic Presentation Format	d389fb65	22	(
358	Slave	Read Response	12	Characteristic Presentation Format	d389fb65	27	)
367	Master	Read Request	13	Characteristic	d389fb65	22	(
369	Slave	Read Response	14	Battery Level	d389fb65	25	)
372	Master	Read Request	14	Battery Level	d389fb65	22	(
375	Slave	Read Response	14	Battery Level	d389fb65	21	)
380	Master	Read Request	15	Characteristic	d389fb65	22	(
383	Slave	Read Response	16	Battery Power State	d389fb65	25	)
388	Master	Read Request	16	Battery Power State	d389fb65	22	(
391	Slave	Read Response	16	Battery Power State	d389fb65	23	)
6,097	Master	Read Request	14	Battery Level	fe289f05	22	(
6,510	Slave	Read Response	14	Battery Level	fe289f05	21	)
7,895	Master	Write Command	14	Battery Level	fe289f05	23	(
22,242	Master	Read Request	14	Battery Level	13e91633	22	)
22,245	Slave	Read Response	14	Battery Level	13e91633	21	(
22,735	Master	Read Request	14	Battery Level	13e91633	22	)

Total Frames: 36,292. Frames Filtered In: 51. Frame As Selected: 383; (1 total)

Decode Pane shows comprehensive layered decoders of each frame/message with clear, concise descriptions.

Summary Pane displays a one line overview of each data frame/message. Click on any line to reveal detail in multiple panes below.

 **TELEDYNE LECROY**  
Everywhereyoulook™

## Hardware Specifications

- Bus Type:** USB 2.0 Mini-B
- Power:** USB Powered (USB 2.0)
- Effective Receiver Sensitivity:** -90.0 dBm for GFSK
- Dimensions:** 3.5" X 1.75" X .71" 89mm X 44.5mm X 18mm
- Temperature:**  
Storage Temperature: 0° to 65° Celsius  
32° to 149° Fahrenheit  
  
Operating Temperature:  
5° to 55° Celsius  
41° to 131° Fahrenheit
- Humidity:**  
Operating: 10% to 90% RH (noncondensing)

## The Frontline BPA® low energy Hardware Interface

The Frontline BPA low energy Protocol Analyzer includes the portable BPA low energy hardware interface, which supports the wireless capture of *Bluetooth* low energy communications.



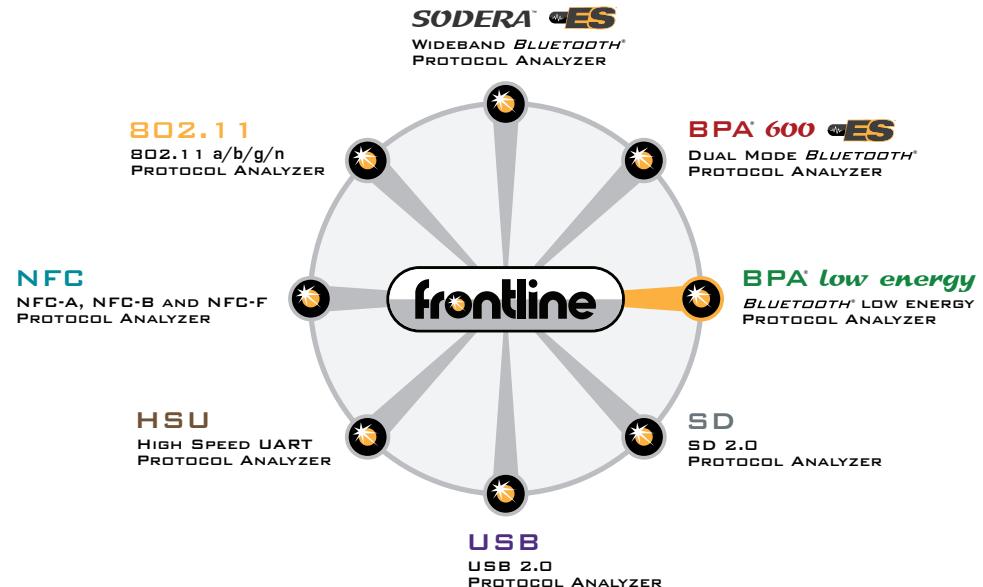
The BPA low energy hardware interface is one member of an extensive arsenal of technology-specific hardware interfaces, all functioning with the powerful Frontline software. This modular approach allows greater flexibility in protocol analysis and debugging, and provides comprehensive coexistence views over virtually any combination of protocols.

## Supported Configurations

- OS Supported: Win 7 and Win 8
- USB Port: USB 2.0 or USB 3.0 High-Speed

## Minimum System Requirements

- Processor: Core i5 processor at 2.7 GHz
- RAM: 4 GB
- Free Hard Disk Space: 20 GB



## The Frontline Modular Approach

Frontline software is at the core of Frontline protocol analysis, allowing technology-specific hardware interfaces to work individually or in combination with other hardware interfaces. This modular approach gives the developer or analyst the widest possible range of scenarios for debugging complex communications.

### To order or for more information:

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