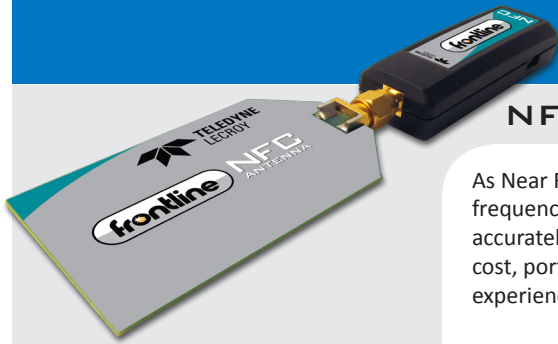


frontline

NFC



NFC-A, NFC-B AND NFC-F PROTOCOL ANALYZER

As Near Field Communication technologies are incorporated in consumer electronics with increasing frequency, developers have demanded a product that can debug and analyze this set of standards accurately and affordably. Frontline has the answer - the Frontline NFC Protocol Analyzer, a low cost, portable and feature-rich analysis tool that comes packed with the quarter century of decoding experience that has made Frontline the industry expert in communications analysis.

The Frontline NFC Protocol Analyzer includes powerful Frontline software and the NFC hardware interface.

NFC Developers Looking for the Right Tool for the Job

Frontline NFC harnesses the power of the Frontline Protocol Analysis System software to analyze and debug NFC technology as used in applications demanding device to device, device to tag, and device as tag data transfer. *Bluetooth*® developers exploiting the out of band pairing aspect of NFC communications will find a place for the Frontline NFC on their workbench.



The Frontline NFC Protocol Analyzer is a portable, USB-powered, and affordable tool for the NFC and *Bluetooth* developer, and features the rich decoding toolset represented by the powerful Frontline Protocol Analysis System software that lives at the core of all Frontline developer-class protocol analysis products.

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

Key Features and Benefits

- **See events as they occur** through live decoding and decryption of encrypted data
- **Compact footprint delivers big features** to developers of NFC and *Bluetooth* technologies
- **USB-powered** means excellent portability and simpler device setup - just plug into the USB port and go!
- **Excellent Value**
The low-cost ComProbe NFC features maximum value for the money
- **Industry-best Decodes**
NFC decodes that no one else in the industry can match
- **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

| B... | Frame# | Command/Response | Block Type | Command | Block # | File ID | Frame... | Delta | Timestamp |
|------|--------|------------------|------------|-------------------|---------|----------------------|----------|-------------|----------------------------|
| | 16 | Command | I | Invalid | 0 | | 8 | | 5/25/2012 9:39:28.08719... |
| | 17 | Response | I | Invalid | 0 | data [0x0] | 12 | 00:00:00... | 5/25/2012 9:39:28.08907... |
| | 18 | Command | S | DESELECT | | | 3 | 00:00:00... | 5/25/2012 9:39:28.10429... |
| | 19 | Response | S | DESELECT | | | 3 | 00:00:00... | 5/25/2012 9:39:28.10464... |
| | 32 | Command | I | Select by Name | 0 | | 16 | 00:00:00... | 5/25/2012 9:39:28.15409... |
| | 33 | Response | I | Command Completed | 0 | | 5 | 00:00:00... | 5/25/2012 9:39:28.15628... |
| | 34 | Response | I | Command Completed | 1 | Capability Container | 10 | 00:00:00... | 5/25/2012 9:39:28.16058... |
| | 35 | Response | I | Command Completed | 1 | | 5 | 00:00:00... | 5/25/2012 9:39:28.17148... |
| | 36 | Command | I | ReadBinary | 0 | | 8 | 00:00:00... | 5/25/2012 9:39:28.18613... |
| | 37 | Response | I | Command Completed | 0 | | 8 | 00:00:00... | 5/25/2012 9:39:28.18837... |
| | 38 | Command | I | Select by File ID | 1 | 0x104 | 10 | 00:00:00... | 5/25/2012 9:39:28.20457... |
| | 39 | Response | I | Command Completed | 1 | | 5 | 00:00:00... | 5/25/2012 9:39:28.20623... |
| | 40 | Command | I | ReadBinary | 0 | | 8 | 00:00:00... | 5/25/2012 9:39:28.22121... |
| | 41 | Response | I | Command Completed | 0 | data [0x104] | 7 | 00:00:00... | 5/25/2012 9:39:28.22237... |
| | 42 | Command | I | Select by File ID | 1 | 0x104 | 10 | 00:00:00... | 5/25/2012 9:39:28.23796... |
| | 43 | Response | I | Command Completed | 1 | | 5 | 00:00:00... | 5/25/2012 9:39:28.23822... |
| | 44 | Command | I | ReadBinary | 0 | | 8 | 00:00:00... | 5/25/2012 9:39:28.25251... |
| | 45 | Response | I | Command Completed | 0 | data [0x104] | 34 | 00:00:00... | 5/25/2012 9:39:28.25604... |
| | 46 | Command | I | ReadBinary | 1 | | 8 | 00:00:00... | 5/25/2012 9:39:28.27937... |
| | 47 | Response | I | Command Completed | 1 | | 7 | 00:00:00... | 5/25/2012 9:39:28.28693... |
| | 48 | Command | S | DESELECT | | | 3 | 00:00:00... | 5/25/2012 9:39:28.29660... |
| | 49 | Response | S | DESELECT | | | 3 | 00:00:00... | 5/25/2012 9:39:28.29695... |
| | 52 | Command | R | DESELECT | 0 | | 3 | 00:00:00... | 5/25/2012 9:39:28.48594... |
| | 63 | Response | R | | 1 | | 3 | 00:00:00... | 5/25/2012 9:39:28.48629... |

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

Logical Data Pane shows data in binary, hex and character format.

Hardware Specifications

- **Bus Type:**
USB 2.0 Type A, compatible with USB 1.1
- **Operating Frequency:**
13.56 MHz
- **Power:**
USB Powered
- **Dimensions (assembled):**
5.87" X 1.57" X .59"
149mm X 40mm X 15mm
- **Weight (assembled):**
< 1 oz
- **Temperature:**
Storage Temperature: 0° to 40° Celsius
32° to 104° Fahrenheit

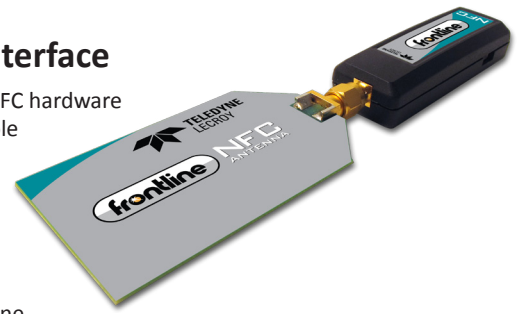
Operating Temperature:
5° to 55° Celsius
41° to 95° Fahrenheit
- **Humidity:**
Operating: 10% to 90% RH (noncondensing)

Decoding Support

- NFC-A, NFC-B, and NFC-F Activation (NFCIP-1)
- Type 1, 2, 3, 4A, and 4B Tag Platforms
- ISO Data Exchange Protocol (ISO-DEP) for Type 4A and 4B Tag Platforms
- NFC Data Exchange Protocol (NFC-DEP) and Logical Link Control Protocol (LLCP) for Peer-to-Peer communications
- NFC Data Exchange Format (NDEF)
- Simple NDEF Exchange Protocol (SNEP) and NDEF Push Protocol (NPP)
- Connection Handover including Bluetooth Out-of-Band (OOB) Pairing

The ComProbe NFC Hardware Interface

The Frontline NFC Protocol Analyzer includes the NFC hardware interface (consisting of the main unit and detachable antenna), which supports the wireless capture of NFC communications.



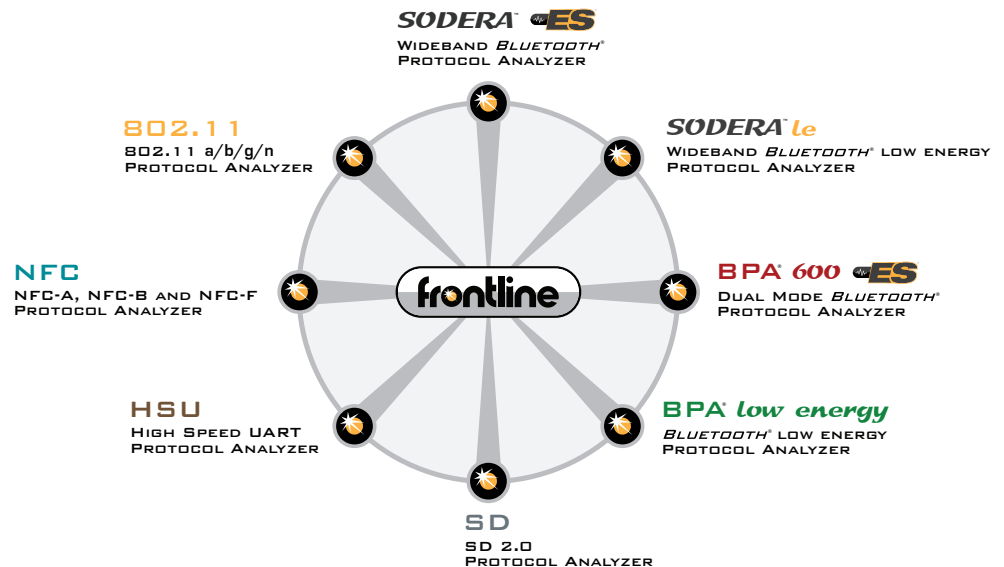
The NFC hardware interface is one member of an extensive arsenal of technology-specific hardware interfaces, all functioning with the powerful Frontline software. This modular approach allows greater flexibility in protocol analysis and debugging, and provides comprehensive coexistence views over virtually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

Supported Configurations

- OS Supported: Windows 7, 8 and 10
- 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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