

INTREPID CONTROL SYSTEMS KOREA

Wave

B P S

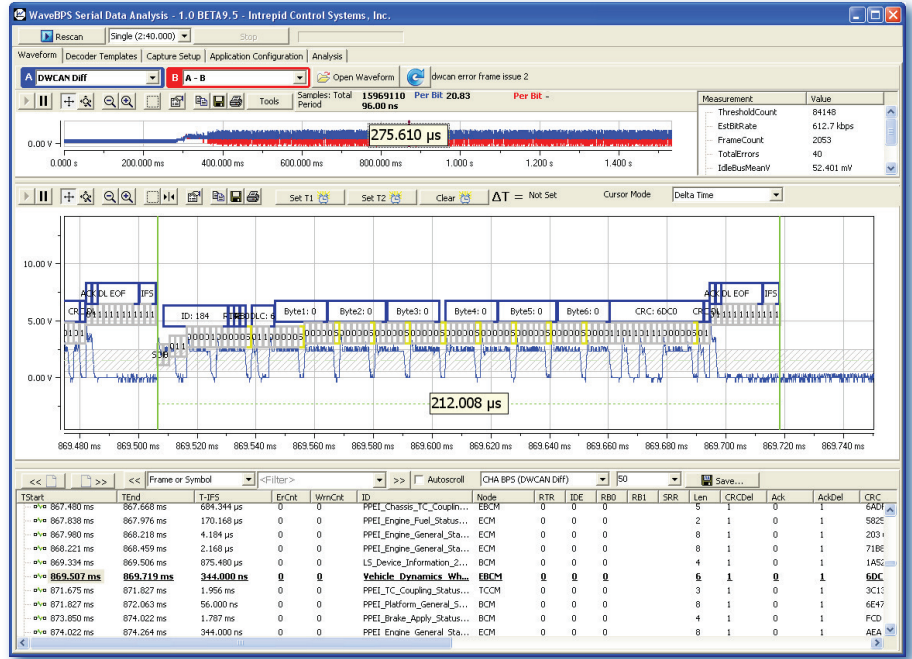
휴대용 low level 아날로그 데이터 분석기

CAN, LIN, FlexRay 등의 네트워크에서 실제 파형이 잘못될 수도 있지만, 네트워크 분석 툴로는 이러한 오류 상황에 대한 충분한 정보를 얻기 어렵습니다. 이러한 경우 버스의 하위 레벨에서 일어나는 현상을 직접 확인해보아야 할 필요성이 생기게 됩니다.

이러한 상황에서 유용하게 사용될 수 있는 WaveBPS는 FlexRay, CAN bus, CAN-FD bus, UART (J1708, K-line, SCI, GM CGI), J1850, SPI, I2C, LIN bus 와 같은 시리얼데이터의 아날로그 파형에 대한 수집 및 분석 용도로 사용할 수 있는 진보된 툴입니다. 일반적인 용도의 모니터링 외에도, WavaBPS는 아주 드물게 발생하는 Protocol violation 들도 빠르게 캡처가 가능합니다.

이점

- 차량이나 플랜트 등으로 가벼운 오실로스코프를 가지고 다닐 수 있습니다.
- 자동화된 측정으로 프로토콜 에러를 발생시키는 노드를 빠르게 찾아내, 시간을 절약할 수 있습니다.
- ECU의 아날로그 기능들을 자동 테스트 함으로써, 생산성을 향상시킬 수 있습니다.
- ECU들 사이의 메시지들의 상호작용을 파형으로 시각화 함으로써 사용자의 지식 향상에 도움이 됩니다.
- 주기적인 메시지들의 지연 시간 문제해결에 걸리는 시간이 단축됩니다.
- Micro second 수준의 정교한 스크립트를 이용하여 간헐적으로 발생하는 이벤트들의 발생에 대한 근본 원인이 파악 가능합니다.
- Protocol violation의 파형 캡처를 찾으려 하지 않아도 됩니다. (예제 파형 제공됨) Protocol에 대한 매우 세부적인 부분까지 배울 수 있습니다.



WaveBPS는 강력한 자동 측정 및 에러 분석 기능과 함께 아날로그 파형을 CAN, LIN, FlexRay, UART 등의 프로토콜로 해석(decode) 합니다.



The PicoScope 5204 (above) is a 128 Mega-sample depth 250MHz bandwidth USB oscilloscope with advanced triggering

WaveBPS에서의 FlexRay 디코딩 화면 (왼쪽)



Rev.11262013



Missing the knob of a traditional scope?
WaveBPS supports the powerful 3Dconnexion SpaceNavigator six-axis analog knob.

Specifications

- TCP/IP Server Text API allows remote control of application via Windows Clients and Vehicle Spy Function Blocks
- Open DLL import support allows importation of any waveform data from any source
- Export support for raw analog waveforms including efficient binary formats and CSV for either the entire waveform or a subset of waveform
- Export to Vehicle Spy buffer format
- Modification of waveform within software to create improper waveforms for error testing with Arbitrary Waveform Generators
- Import and Export WaveBPS XML configuration files
- Node Analysis can prepare statistical analysis of all network nodes for all decoders and automatic measurements
- Acquisition Modes include Single, Multiple, and Filter Match Capture. Filter Match capture is a multiple capture that stops when there is a filter match.
- Automatic buffer capture mode saves a raw buffer every time a filter condition is matched
- Automatic wave file playing on a filter match
- Cursor Modes allow measurement of : Delta Time in Seconds, Delta Time in Bits, Delta Volts, Absolute Volts, and Bus Utilization
- High Resolution Cursor allows very fine cursor control for measurements across large captures
- Auto scroll waveform based on bit rate or event with programmable rate
- Search, browse and filter based on any automatic measurement
- Powerful Mouse wheel based waveform navigation with optional knob
- Share encrypted waveforms with WaveBPS trial edition users

Hardware Support

- Support of PicoScope 5000 series deep memory oscilloscopes: Programmable Capture and Depth, Oscilloscope probes, Triggering, CAN error frame trigger, external trigger modes, and pre-trigger.
- Support of neoVI FIRE and ValueCAN3 devices for advanced protocol triggering
- Support of Space Navigator 3D six axis knob

Ordering Information:

Part Number	Description
WAVEBPS-PRO	PicoScope 5204, WaveBPS software, Space Navigator Knob, neoVI FIRE, DLC Breakout, Vehicle Spy Software
WAVEBPS-BASE	PicoScope 5204, WaveBPS software, Space Navigator Knob
WAVEBPS-SFT	WaveBPS Software license
WAVEBPS-MAIN	Maintenance 1 Year

All Decoders

- All Automatic Measurements include the time at which they were taken. Clicking on the measurement will focus the zoom view on the measurement times.
- Automatic Measurements for every event: Time Start, Time Width, Inter frame Separation, Error Count, Warning Count, ID including message description, and Node Name
- Database support with import from Vehicle Spy software (UEF, DBC, LDF, FIBEX, etc.)
- User specified Baud Rate and thresholds including inversion
- Decoder Templates allow multiple customizations of each decoder with a custom description
- Supports Math Operations on multiple channels (A-B, A+B)

CAN Decoder

- Automatic Measurement for every message: CAN Remote Transmit Request, CAN Identifier Extension Bit, CAN Reserved Bit Zero, CAN Reserved Bit One, Single Wire CAN High Voltage Message, Single Wire CAN High Voltage Ack Bit, Single Wire CAN High Speed Mode Bit Rate, CAN Substitute RemoteRequest, Length (DLC), CAN CRC Delimiter, CAN Ack Slot, CAN Ack Delimiter, CRC Checksum, CAN Stuff Bit Count, CAN Data Section, CAN Bitrate Tolerance, Minimum Frame Voltage, Maximum Frame Voltage, CAN Acknowledgment Bit Skew, CAN Acknowledgment Bit Width, Percentage of Time Used For Data
- Error & Warning Detection for every message: SRR = 0 Error, RB0 = 1 Error, DLC > 8 Error, Invalid CRC Error, CRC Del = 0 Form Error, Ack Error, ACK Del = 0 Form Error, EOF = 0 Form Error, IFS = 0 Form Error, RB1 = 1 Error, RB0 = 1 Error, Bit Tolerance Limit Error, High Voltage Ack Bit warning, Partial Frame Decode Warning, Error Frame
- Automatic Measurements for entire waveform : Frame Count, Error Count, Idle Bus Mean Voltage, Max Frame Voltage, Min Frame Voltage, Bus Utilization
- GMW3110 Single Wire CAN High-Speed mode transition decoding
- Single Wire CAN High Voltage Threshold setting
- User settable Bit tolerance and Sampling Point
- Satisfies bit tolerance measurements as indicated in GMW14241 - GMLAN Device Test Specification

LIN Decoder

- Automatic Measurement for every message: LIN Sync Break In Bits, LIN Sync Waveform, LIN Slave Response Time, LIN Header Time, LIN Slave Message Time, LIN TMax Utilization, LIN Frame Length, LIN Check Sum, Data
- Error & Warning Detection for every message: TResponse Max Error, Message Length Error, TMax violation Error, Checksum Error, Slave Not Responding Error, Sync Error, THeader Max Error, ID Parity Error, Break Too Short, Break Too Long, Partial Frame Decode Warning
- Automatic Measurements for entire waveform: Frame Count, Error Count

FlexRay Decoder

- Automatic Measurement for every message: FlexRay Reserved Bit, FlexRay Payload Preamble Indicator, FlexRay Null Frame Indicator, FlexRay Sync Frame Indicator, FlexRay Startup Frame Indicator, FlexRay Channel, FlexRay Header CRC, FlexRay Cycle Count, CRC, FlexRay Transmission Start Sequence Length, FlexRay Is Dynamic Frame, Data Length in words, Data Section
- Error & Warning Detection for every message: Header CRC Error, CRC Error, Partial Frame Decode Warning
- Automatic Measurements for entire waveform: Frame Count, Error Count
- Automatic A-B channel detection or fixed channel setting for decoder

Please visit www.intrepidcs.com for specifications on UART, J1850, I2C, and SPI Decoders