



# ITIC 1480A USB 2.0 Protocol Analyzer

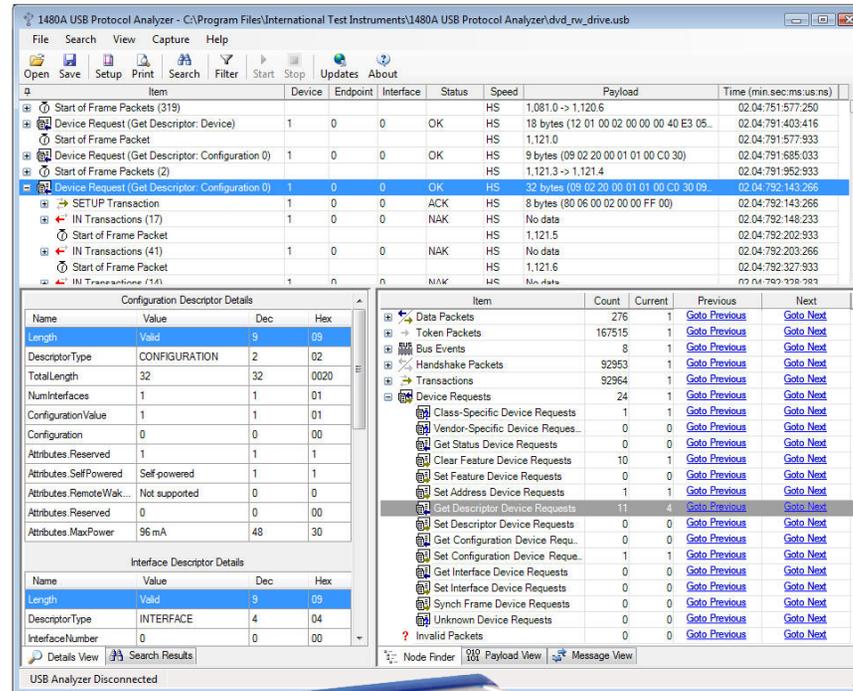
## About ITIC

International Test Instruments Corporation designs, manufactures and sells high-quality, full-featured but at the same time low-cost protocol analyzers. We do not have the overhead of a large marketing and sales organization but instead sell directly from engineer to engineer, passing on the cost savings to you, our fellow Engineers. This allows us to offer quality products priced far below other alternatives on the market.

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## 1480A Overview

- Organizes the USB protocol data into a hierarchical tree view which reflects the nesting of the actual USB protocol on the bus.
- Supports all USB 2.0 speeds (Low-speed, Full-speed and High-speed)
- Automatically detects link speed as USB devices are connected to the link under test
- FPGA-based design allows automatic update of firmware and software without user involvement
- Decodes and displays all standard USB Descriptors, Transactions and Packets for easy and quick analysis
- Decodes and displays all bus events down to the most detailed differential D-/D+ bus state changes with 16.67 ns resolution.
- Drivers and software are available for all 32-bit and 64-bit Windows platform (Windows XP and newer)
- A very small physical format and a bus-powered design allows easy transportation and convenient use with laptops (only 4.90" x 4.10" x 1.4" / 8.8oz or 125 x 105 x 35 mm / 250g).
- Designed, manufactured and supported in the U.S.A.

## International Test Instruments Corporation

From Engineer to Engineer



## 1480A Software Overview

The 1480A software decodes and displays the captured USB data in a hierarchical tree view which allows large amounts of data to be displayed in very compact form.

USB Descriptors, Transactions and Packets are decoded in great detail which allows easy bus traffic analysis at a mere glance.

USB devices communicated with during the capture session are displayed in a separate 'Discovered Devices' view which enables device enumerations to be found quickly in the trace data.

The 'Node Finder' view records statistics about captured packets and transactions and allows direct jumps to any information in the trace, even if located deep inside the protocol hierarchy.

Visit our web site for a complete 1480A software tutorial and software downloads.

### **Hierarchical Protocol Tree View**

Organizes the USB protocol data into an hierarchical tree view which reflects the nesting of the actual USB protocol on the bus. This greatly eases understanding of the USB protocol.

### **USB Protocol Item Data**

The right side of the Protocol View displays payload data for the selected protocol item as well as relative or absolute timestamps with 16.67 ns resolution.

The screenshot shows the 1480A USB Protocol Analyzer software interface. The main window displays a hierarchical tree view of USB protocol data. The selected item is a 'Device Request (Get Descriptor: Configuration 0)' with a payload of 35 bytes. The details view shows the OTG Descriptor Details and Interface Descriptor Details. The Node Finder view displays statistics for various protocol items.

Item	Device	Endpoint	Interface	Status	Speed	Payload	Time (min.sec.ms:us:ns)
Start of Frame Packet					HS	213.5	00:09:135:689:183
Device Request (Get Descriptor: Configuration 0)	1	0	0	OK	HS	9 bytes (09 02 23 00 01 01 00 00 00)	00:09:135:781:033
Start of Frame Packets (2)					HS	214.0 -> 214.1	00:09:136:064:233
Device Request (Get Descriptor: String 0)	1	0	0	OK	HS	4 bytes (04 03 09 04)	00:09:136:306:466
Device Request (Get Descriptor: String 2)	1	0	0	OK	HS	42 bytes (2A 03 30 00 30 00 30 00 30 00...	00:09:136:558:300
Start of Frame Packets (2)					HS	215.0 -> 215.1	00:09:137:064:400
Device Request (Get Descriptor: Configuration 0)	1	0	0	OK	HS	35 bytes (09 02 23 00 01 01 00 C0 00 03...	00:09:137:194:066
Start of Frame Packets (2)					HS	215.4 -> 215.5	00:09:137:564:466
Device Request (Get Descriptor: String 0)	1	0	0	OK	HS	4 bytes (04 03 09 04)	00:09:137:808:016

OTG Descriptor Details			
Name	Value	Dec	Hex
Length	Valid	3	03
DescriptorType	OTG	9	09
Attributes.Reserved	00	0	00
Attributes.HNP Support	Supported	1	1
Attributes.SRP Support	Supported	1	1

Interface Descriptor Details			
Name	Value	Dec	Hex
Attributes.MaxPower	0 mA	0	00

Item	Count	Current	Previous	Next
Data Packets	2882	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Token Packets	54592	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Bus Events	16	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Handshake Packets	45697	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Transactions	45703	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Device Requests	23	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
Invalid Packets	0	0	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>
On-The-Go Events	1	1	<a href="#">Goto Previous</a>	<a href="#">Goto Next</a>

### **Details View**

Displays the details of the selected Device Request, Transaction or Packet. Additional tabs also display search results and trace marker views.

### **Additional Views**

Various views are available that ease navigation to any protocol item, display of hexadecimal payload data and display of low-level PHY data.

### **Node Finder View**

This view displays statistics of the protocol items captured and allows immediate jump to any of the protocol items in the captured trace data.