

| Main functions      |   |
|---------------------|---|
| Applicable standard | USB Ver. 2.0  |
| Speed               | High-speed (480 Mbps), Full-speed (12 Mbps), Low-speed (1.5 Mbps) The speed is recognized/switched automatically.   |
| Data record method  | Recording in blocks of a byte to PC's hard disk   |
| Record capacity     | Max. 2 GB (recorded to PC's hard disk)<br>Main unit buffer size 512 MB  |
| PC interface        | USB (Ver. 2.0) standard port (Port B)   |
| I/O terminals       | Two USB ports (Port A and B)  |
| Indicators (LED)    | USB BUS<br>HI: Lights up when connected to a high-speed device. FULL: Lights up when connected to a full-speed device.<br>LOW: Lights up when connected to a low-speed device. RESET: Lights up at bus reset. SUSPEND: Lights up in idle state. |
|                     | LOGGING<br>FULL: Lights up when the built-in buffer memory is full. EMPTY: Lights up when the built-in buffer memory is empty.  |
|                     | OTHER<br>POWER: Lights up when the power is on. READY: Lights up when an operation is ready. DATA STREAM: Lights up when data is flowing.   |
| Comment             | Up to 1024 bytes can be entered for each log file.  |
| Display packet      | OUT, IN, SOF, SETUP, DATA0, DATA1, DATA2, MDATA, ACK, NAK, STALL, NYET, PRE, ERR, PING, SPLIT   |
| Display filter      | SOF, PING-NAK, NAK, IN-NAK, OUT-NAK/SETUP-NAK, address, endpoint  |
| Search              | SOF, CRC Error, PID Error, Setup-Token, IN-Token, OUT-Token, PING-Token, ACK, NAK, STALL, NYET, specified address,<br>specified endpoint, no communications at specified time, and over   |
| Mark & jump         | Up to 99 marks can be set for each log file. Deletion of marks, jumping to marks, listing and editing marks.  |
| Power Supply        | 100 V to 240 V AC, 50/60 Hz, Max. 10 VA   |
| Size & weight       | Approx. 145 X 45 X 192.5 (mm), approx. 1 kg   |
| Accessories         | SB-2020 Software CD-ROM (1), Power cord (1), USB cable (2), Instruction manual(1)   |
| Environment         | Operating temperature +5 to +40°C Operating humidity 80% RH or less (noncondensing) Storage temperature 0°C to +55°C  |

| Standard requests and descriptors that can be displayed in detail |   |
|---|---|
| Standard requests   | CLEAR_FEATURE, SET_FEATURE, SET_ADDRESS, GET_DESCRIPTOR, SET_DESCRIPTOR, GET_STATUS,<br>GET_CONFIGURATION, SET_CONFIGURATION, GET_INTERFACE, SET_INTERFACE, SYNCH_FRAME         |
| Standard descriptors  | Device Descriptor, Configuration Descriptor, Interface Descriptor, Endpoint Descriptor, String Descriptor,<br>Device Qualifier Descriptor, Other Speed Configuration Descriptor |
| Device class descriptors  | HUB class, HID class, Audio class   |

| SB-2020 controller PC |  |
|-----------------------|--|
| CPU                   | IBM PC/AT compatible with High-speed USB port<br>Pentium III processor 500 MHz or higher (Pentium 4 processor 2 GHz or higher recommended) |
| Memory                | 256 MB or higher   |
| Hard disk             | 3 MB or more free space for installation of the software. A sufficient free space for communication log is also required.                  |
| Display               | XGA (1024 X 768) or higher resolution recommended  |
| USB port              | USB port Ver. 2.0 recommended (necessary to support Microsoft's host controller driver)  |
| Operating System      | Windows 2000 Professional SP4<br>Windows XP Home Edition SP1 / Professional SP1  |

\*Because some IBM PC/AT compatible machines have the original specifications of PC manufacturer or use a new architecture, Those machines may not operate even when they meet all the above specifications.



Design and specifications subject to change without notice.

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Distributor

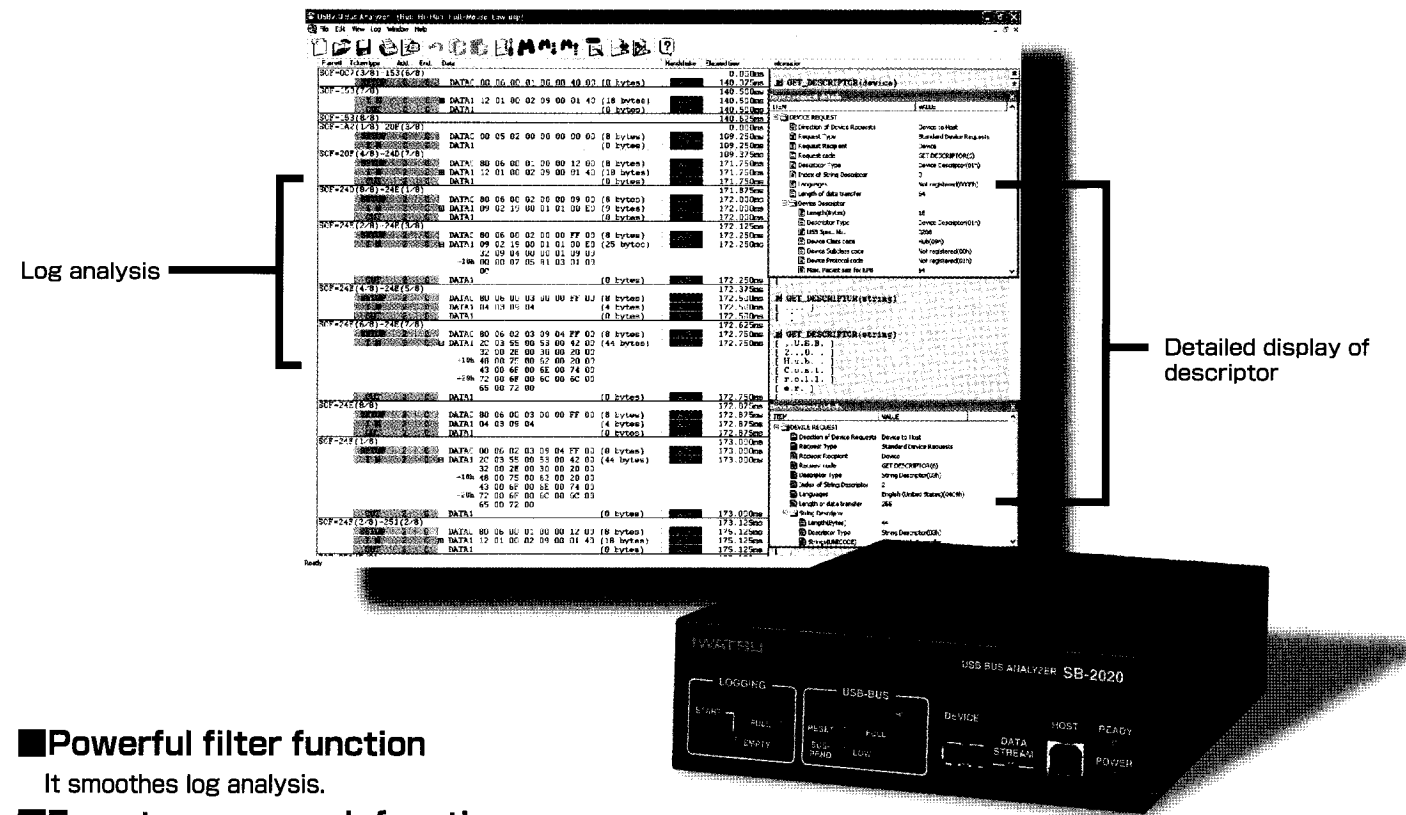


**IWATSU**  
TEST  
INSTRUMENTS  
CORPORATION

Automatic switch functions for 3 speeds  
512 MB of capture memory  
USB (Ver. 2.0) bus protocol analyzer

**SB-2020**

- Automatic switch functions for Hi-speed (480 Mbps), Full-speed (12 Mbps) and Low-speed (1.5 Mbps)  
These functions contribute to the development of not only the latest USB (Ver. 2.0) devices but also low-speed devices such as a mouse and a keyboard.
- Display/analysis/recording of USB communications log on a PC  
SB-2020 captures the data stream from the USB bus, and the analysis software runs on Windows PC.
- Tree structure display of descriptors  
It provides easier protocol analysis without having to struggle with complicated written standards.
- Visualization of USB transactions  
The communications status appears for each transaction, leading to the visual communications status.

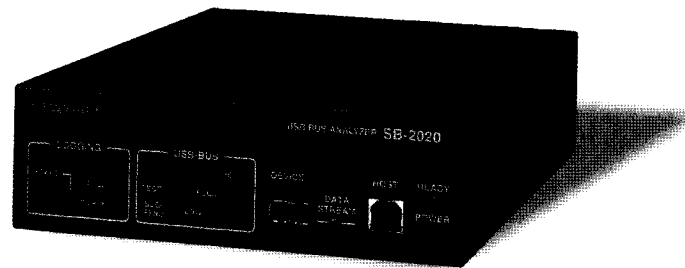


- Powerful filter function  
It smoothes log analysis.
- Easy-to-use search function
- 512 MB of capture memory  
It offers complete capture of high-speed data on USB (Ver. 2.0) (480 Mbps) devices. It also offers fewer missing image data and data being processed.
- Record max. 2 GB of log data in series  
Captures data to unit and transfers it to the PC. Long-time recording makes it easy to see rare data.



# Compact and light weight, easier to use USB Ver.2.0 Bus Protocol Analyzer SB-2020 from IWATSU!

The USB Bus Protocol Analyzer SB-2020 allows visual analysis of packets and transactions by capturing traffic on the USB (Ver. 2.0) to a personal computer (PC). It also gives automatic switch functions for Hi-speed (480 Mbps), Full-speed (12 Mbps) and Low-speed (1.5 Mbps) and complete capture of high-speed data with 512 MB of capture memory.



Front panel



Start button

USB port B  
USB port A

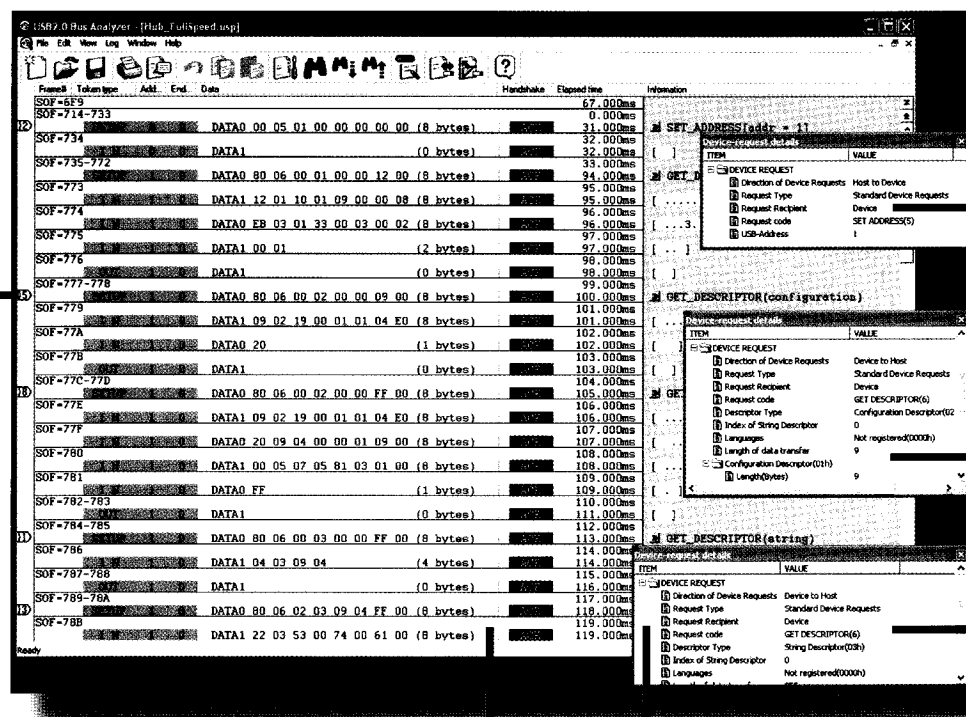
Rear panel



Power switch

PC port

## Main analysis functions



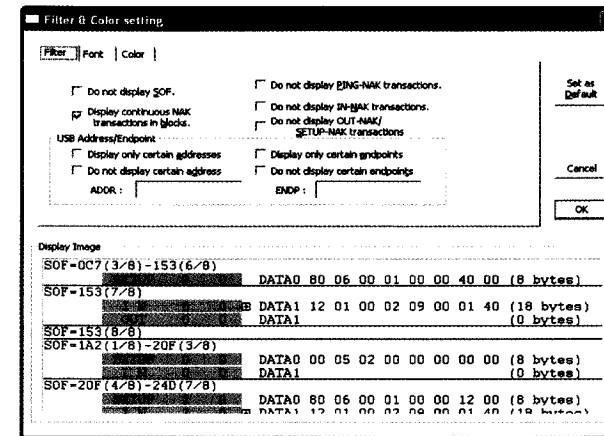
It is effective to use mark & jump functions for debugging.

Easy-to-see analysis screen displays 1 transaction 1 line. Elapsed time is also displayed.

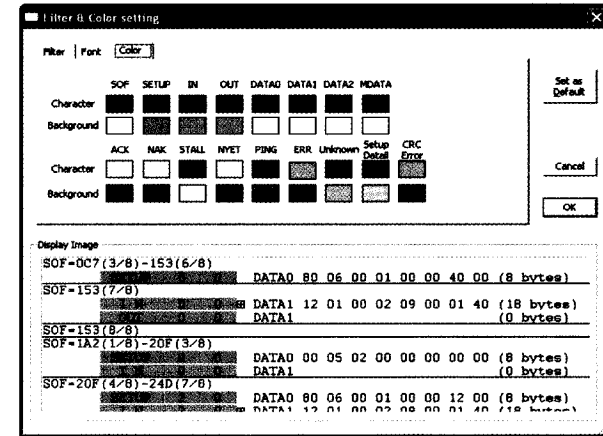
Display of translated standard requests and descriptors. No need to struggle with complicated written standards.

Simultaneous multiple displays of translations.

## Filter setting functions

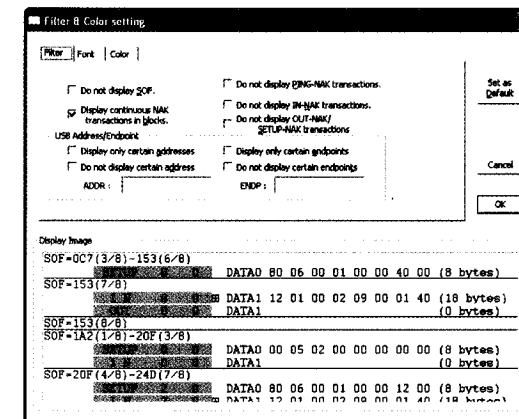


Display filter functions provide you with efficient analysis.



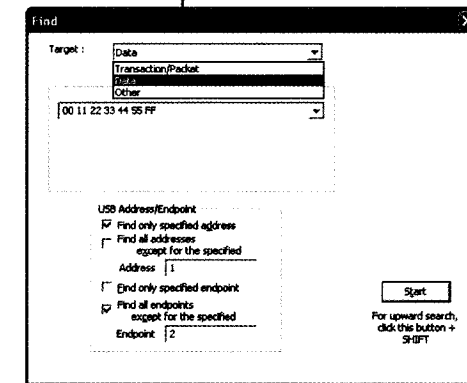
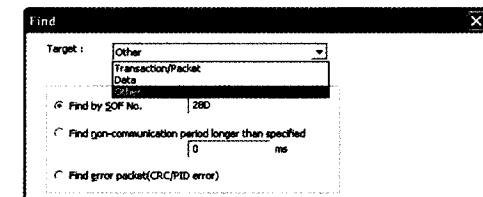
Customized display font and color provide you with more efficient analysis.

## Search setting functions



Search setting screen for transactions/packets. It makes effective debugging with flexible search function.

Narrowing at specific data, address point, and SOF No. are available.



## Convenient functions

- Text file output.....Text file output of Max. 2 GB logging data is available. It is useful to send traffic data by E-mail on debugging or troubleshooting.
- Editing of logging data..... The necessary parts of logging data can be edited by copy & paste to compact long data.
- Comment function on logging data...Max. 1024-byte comment is available. Comments are displayed on the title bar so you can arrange log files.
- Arranged display of data.....Data can be displayed in [packet] or [transaction] according to USB standards.
- Printing function..... The above data can be output to your printer. It allows you tracing on your desk.
- Data copy to other application programs...The clipboard function in Windows allows copying data on [transaction] or [SOF packet display line], and pasting text data to other application programs and re-editing it.