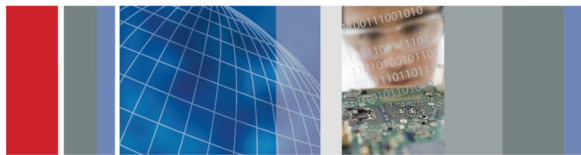## BSAUSB
USB Receiver Testing Application

Installation Instructions

Tektronix

Overview

Use this document to get your BERTScope hardware connected and the software and drivers installed. The instrument front-panel connections for a typical USB test setup are shown at the end of the procedures.

The following procedures should be done in the order they are presented:

1. Make the USB connections.

2. Make the Ethernet connections.

3. Load and configure the oscilloscope software.

4. Load and configure the BERTScope software (download the latest BERTScope software from www.tektronix.com).

5. Load and configure the USB Automation software on your PC (this software can instead be loaded on the oscilloscope or BERTScope, but is not recommended).

Required Equipment

You need the equipment and software listed below to complete these procedures.

BSASWITCH Tektronix Instrument Switch
CR125A Clock Recovery Unit (or equivalent)
DPP125 Digital Pre-emphasis Processor unit
BSA BERTScope C model, with option SF and STR installed
DPO/DSA/MSO71604C or above oscilloscope
Ethernet switch,10/100 Mbps minimum
(3) Ethernet cables
(3) USB cables, A–B, (standard accessories with the equipment)
USB Receiver Testing Application software (downloadable from www.tektronix.com); includes switch control software and drivers, control panel and socket server, manual, BSAUSB31, BSAUSB3, and BSASWITCH.
SigTest tool (application software downloadable from USB.org; search SigTest tool)
(Recommended) PC w/Windows XP, Vista, or Windows 7 OS. Note: Although the BERTScope or oscilloscope can be used as the controller instead of a PC, it is not recommended.
(Optional) USB Receiver Testing MOI

Make the USB Connections

This setup uses the Clock Recovery Unit as the USB hub. Using 3 USB A–B cables, make the following USB connections on the rear panels of the equipment:

1. Insert the B end of a USB cable into the Instrument Switch. Connect the other end of the cable into any USB-A connector on the Clock Recovery Unit.

2. Insert the B end of a USB cable into the USB-B connector on the Clock Recovery Unit. Connect the other end of the cable into the BERTScope.

3. Insert the B end of a USB cable into the DPP Unit. Connect the other end of the cable into any USB-A connector on the Clock Recovery Unit.
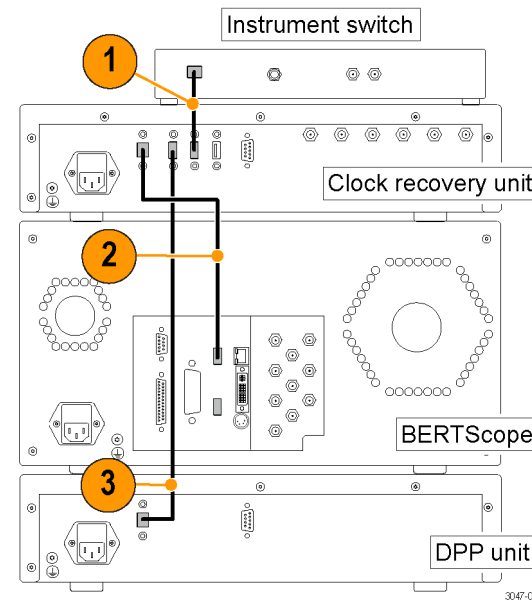
Make the Ethernet Connections

The setup described here uses an Ethernet switch, but you can use your internal Ethernet network instead. Using 3 Ethernet cables, make the following Ethernet connections on the rear panels of the equipment:

1. Insert an Ethernet cable into the Ethernet Switch. Connect the other end of the cable into the BERTScope.

2. Insert another Ethernet cable into the Ethernet Switch. Connect the other end of the cable into the oscilloscope.

3. Insert a third Ethernet cable into the Ethernet Switch. Connect the other end of the cable into the Ethernet port on your computer.
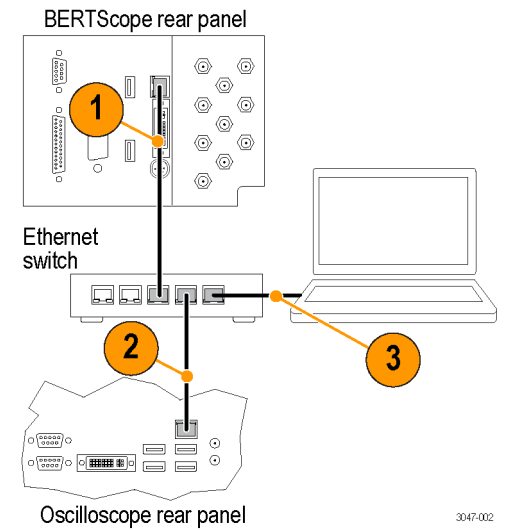

Load and Configure the Software and Drivers

The BERTScope and oscilloscope must be loaded with application software. The USB Automation software should be loaded on a separate PC.

Oscilloscope Software

1. Load Visa Socket Gateway on the oscilloscope. This software must be running on the oscilloscope to allow communication between the instruments.

2. Record the IP address; it is used later in the *Windows PC Software* procedure.
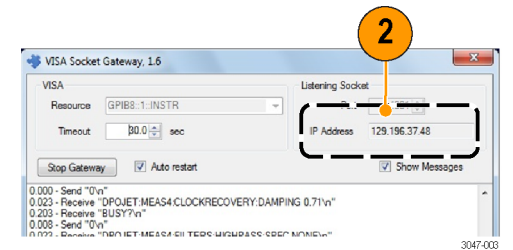
3. Load the SigTest application software on the oscilloscope.

4. Load the SigTest Server software on the oscilloscope. This software must be running on the oscilloscope to allow communication to the SigTest application.

5. Record the IP address of the SigTest application; it is used later in the *Windows PC Software* procedure.

BERTScope Software

1. Power on the Clock Recovery unit, BERTScope, and instrument switch, but do not power on the DPP until after the BERTScope Main Window displays.

2. Install the Switch Control Software on the BERTScope.

    -   The installation package is on the software disk.

    -   The Switch Control Software must be running on the BERTScope to allow communication with the Instrument Switch.

    -   The Switch Control window displays "Connected to:" when it connects to the Instrument Switch.
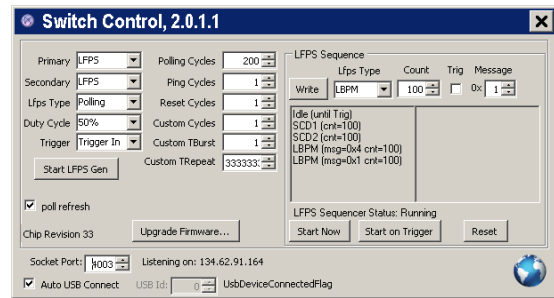
3. Enable the Remote Client on the BERTScope:

    a. Click start > Programs > BERTScope > Remote Client.

    b. Select TCP-IP.

    c. Record the IP address; it is used later in the *Windows PC Software* setup procedure.
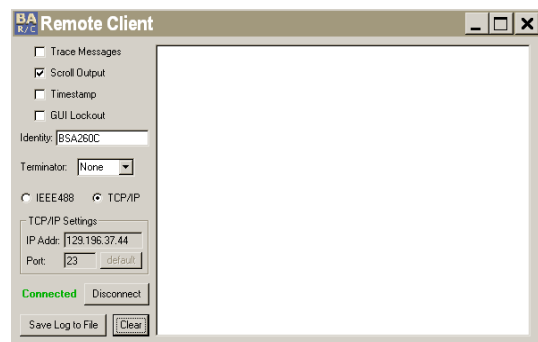

Windows PC Software

For best system performance, load the USB Automation Software on an external PC or laptop computer.

1. Install the USB Automation Software on the PC.

NOTE. Check with your Tektronix Sales Representative for any later versions of the USB Automation Software.
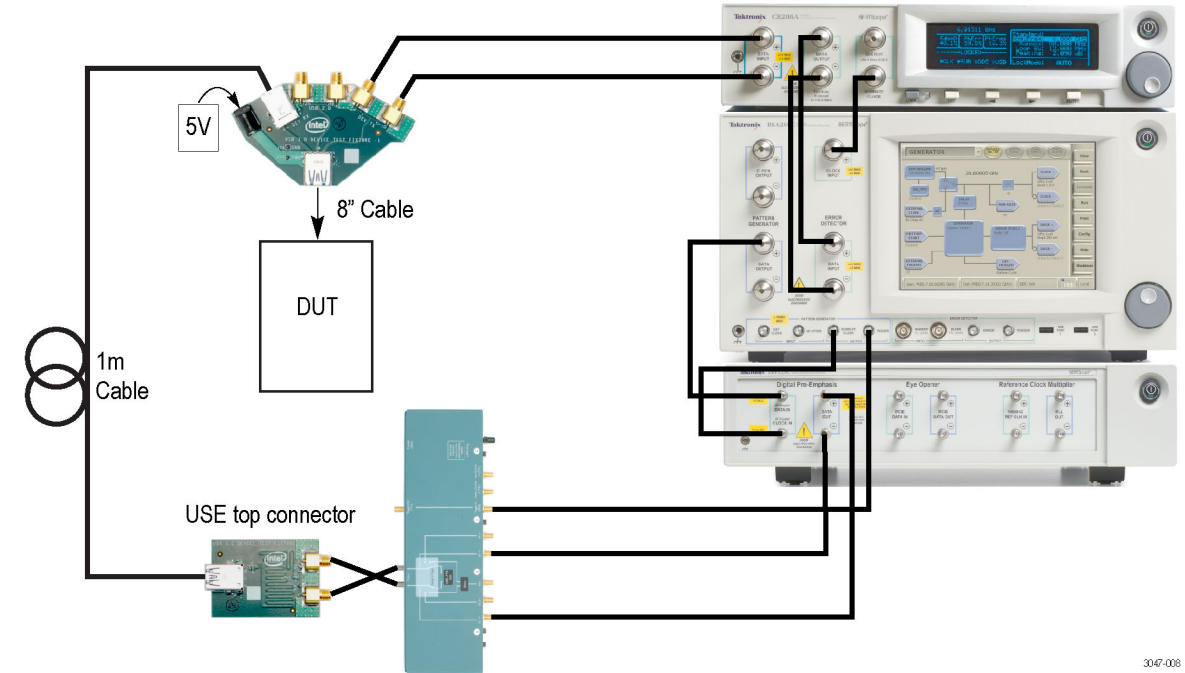
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2. Once installed, open the application and click Preferences > Equipment.

3. Open the window for each instrument and enter the IP address as instructed in steps 4 and 5.

4. Enter the BERTScope IP address in the Address fields for both the BERTScope and for the Switch.

5. Enter the oscilloscope IP address in the Address fields for both the oscilloscope and SigTest server.

6. Click Start Connect. The Start Connect window appears.
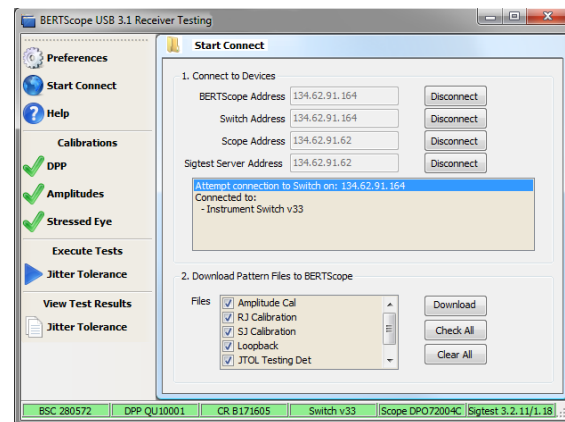
7. Click Connect for all four entries. The red tabs at the bottom of the window change to green when connected.

8. If the BERTScope is being used for the first time for USB testing, check all of the boxes for the data pattern files in the lower half of the Start Connect window, and then click Download.

Typical Test Setup

The SuperSpeed signal connections for a typical USB test setup are shown. For details about the fixtures, adapters, and other equipment required for this setup, see your user manual. The manual also includes information about setting up and using other test configurations.

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