Quick Start Guide

2300-533-R
System Verification Software (SVS)

MS2026B and MS2028B VNA Master™
MS2026C, MS2027C, MS2028C, MS2036C, MS2037C, MS2038C VNA Master™
SC7858 Verification Kit, N Connectors
SC7859 Verification Kit, K Connectors

This quick start guide provides a brief overview of the installation and use of the 2300-533-R System Verification Software and the SC7858 and SC7859 Verification Kits with these handheld VNA Masters.
1-1 Verification Kit Components

The supplied Verification Kit components are listed to the right in Figure 1-1.

**SC7858 N Components**
1. USB Memory Device
2. Airline 18N50-10
3. Beatty Airline 18N50-10B
4. 20 dB Attenuator 42N-20
5. 50 dB Attenuator 42N-50

**SC7859 K Components**
1. USB Memory Device
2. Airline 19K50-7
3. Beatty Airline 19K50-7B
4. 20 dB Attenuator 42K-20
5. 50 dB Attenuator 42K-50

**Figure 1-1.** SC7858 and SC7859 Verification Kit Components
1-2 Required Equipment

The required equipment varies depending on the Verification Kit and VNA Master that are being tested.

Table 1-1. Required Equipment

<table>
<thead>
<tr>
<th>Required Equipment</th>
<th>SC7858 N Verification Kit</th>
<th>SC7859 K Verification Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>VNA Master</td>
<td>MS2026B, MS2026C, MS2027C, MS2028C, MS2036C, MS2037C, MS2038C</td>
<td>With Option 11: MS2026B, MS2028C, and MS2038C</td>
</tr>
<tr>
<td>PC Controller Minimum</td>
<td>Microsoft Windows XP, 1 GB RAM, CD Drive, at least 20 MB of free hard disk space, USB 2.0 Type A port or Ethernet port</td>
<td>Microsoft Windows XP, 1 GB RAM, CD Drive, at least 20 MB of free hard disk space, USB 2.0 Type A port or Ethernet port</td>
</tr>
<tr>
<td>Software Driver</td>
<td>National Instruments VISA Runtime version 3.6 or later&lt;sup&gt;a&lt;/sup&gt;</td>
<td>National Instruments VISA Runtime version 3.6 or later&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Instrument USB Driver</td>
<td>Anritsu USB Driver</td>
<td>Anritsu USB Driver</td>
</tr>
<tr>
<td>Interface Cable</td>
<td>If using USB, then use Anritsu 3-2000-1498 USB A-mini cable.</td>
<td>If using USB, then use Anritsu 3-2000-1498 USB A-mini cable.</td>
</tr>
<tr>
<td></td>
<td>If using Ethernet, then use Anritsu 3-806-152 Crossover Patch Cable (direct connection) or 2000-1371-R Ethernet Cable (via network hub/switch).</td>
<td>If using Ethernet, then use Anritsu 3-806-152 Crossover Patch Cable (direct connection) or 2000-1371-R Ethernet Cable (via network hub/switch).</td>
</tr>
<tr>
<td>M-F Through Cable</td>
<td>Anritsu 3670NN50-2</td>
<td>Anritsu 3670K50-2</td>
</tr>
<tr>
<td>M-M Adapter</td>
<td>NA</td>
<td>Anritsu 33KK50B</td>
</tr>
<tr>
<td>Male Calibration Tee</td>
<td>Anritsu OSLN50</td>
<td>Anritsu OSLK50</td>
</tr>
<tr>
<td>Female Calibration Tee</td>
<td>Anritsu OSLNF50</td>
<td>Anritsu OSLKF50</td>
</tr>
</tbody>
</table>

<sup>a</sup>National Instruments VISA Runtime license is available from National Instruments as a stand-alone software package or as part of National Instruments GPIB adapter Hardware package. Please contact National Instruments for details.
1-3 PC Controller Ethernet Cable Connection to VNA Master

The basic connections between a PC and the VNA Master using Ethernet interface are shown in Figure 1-2.

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Figure 1-2. Basic Connections Between PC and VNA Master Using Ethernet Interface

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VNA Master MS202xB</td>
</tr>
<tr>
<td>2</td>
<td>PC Controller</td>
</tr>
<tr>
<td>3</td>
<td>Ethernet Cable</td>
</tr>
<tr>
<td>4</td>
<td>Verification Kit USB Memory Device with characterization data</td>
</tr>
</tbody>
</table>
## 1-4 PC Controller USB Cable Connection to VNA Master

The basic connections between a PC and the VNA Master using USB interface are shown in Figure 1-3.

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**Figure 1-3.** Basic Connections Between PC and VNA Master Using USB Interface

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VNA Master MS202xB</td>
</tr>
<tr>
<td>2</td>
<td>PC Controller</td>
</tr>
<tr>
<td>3</td>
<td>USB A-mini Cable</td>
</tr>
<tr>
<td>4</td>
<td>Verification Kit USB Memory Device with characterization data</td>
</tr>
</tbody>
</table>
1-5 Installing the System Verification Software Application

1. Put the System Verification Software Application CD into the CD Drive on the PC Controller.
2. The CD AutoRun function should display the Startup screen.
3. If the installation does not start automatically, then navigate to the CD directory and double-click the file named VNAMasterVerificationSetup.exe.
4. Follow the dialog box instructions to complete the software installation.

Figure 1-4. System Verification Software Application CD Startup Screen
1-6 User Interface Operation

Double-click the VNA Verification Software desktop icon to launch the System Verification Software Application. Preliminary screens gather information about the VNA Master and the Calibration and Verification components. When done gathering information, the Verification Program Main Screen appears. Not all areas may be initially available depending on setup and completion status.

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**Figure 1-5. VNA Master Verification Program Main Screen**

1. SVS Desktop Icon
3. Begin VNA Verification Button – Starts setup process. When setup is complete, the button is unavailable.
4. Return to Begin VNA Verification Screen Button – Restarts the setup procedure
5. Tests Area – Allows all or some tests to be selected. As each test is completed, the checkbox is deselected.
6. Start VNA Measurements – After the setup is complete, this button starts the selected tests.
7. Results Area – As each test is completed, a color-coded row appears. Double-click the row to see the report.
8. Display Area – A scrollable listing of key test events, file names, and test status
9. Setup Tab – Lists model information and serial numbers for all devices
10. Display Tab – Not shown here. Test Progress buttons display test completions. The Progress Bar shows individual test progress.
11. Exit Button – Exits the PVS application
Any combination of tests can be selected. If all are selected, then the sequence is: VNA Calibration first, and then verification tests of Airline (DAT), Airline (UNC), Beatty Airline (DAT), Beatty Airline (UNC), 20 dB Offset (Pad) (DAT), 20 dB Offset (Pad) (UNC), 50 dB Offset (Pad) (DAT), and 50 dB Offset (pad) (UNC). Each verification test generates CSV DAT and TXT UNC reports. The CSV DAT reports are the current measured data for the user devices. The TXT UNC reports are the calculated uncertainty based on the measured data and the verification kit certification data. The reports can be viewed and printed. Other applications, such as spreadsheets or word processors, can easily import the report data.