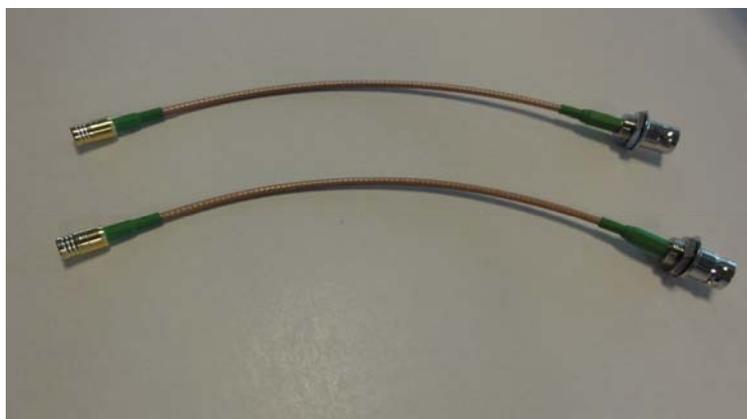


**HD PROTAB STC****HD NETWORK DELAY APP  
installation****Time: 1 h****BENCH PREPARATION:**

- a) “HD NETWORK DELAY” HW kit,
- b) Wrench n. 13,
- c) Screwdriver,
- d) “HD NETWORK DELAY” software app,
- e) SMART PC program.

**PROCEDURE: sequence numbers**

1. Inspect the HW provided with the “HD NETWORK DELAY” app (see Picture 1a),
2. Load the software app “HD NETWORK DELAY” on the HD PROTAB analyzer using the SMART PC program (appendix A),
3. Remove the HD PROTAB from its protective bag and place a protection (i.e. carton) on top of the 10.2” touch screen using for example paper glue tape (see Picture 2),
4. Remove the back metal housing shell using a screwdriver (Picture 3),
5. **IMPORTANT Disconnect the battery pack by detaching the battery cables from the motherboard (see Picture 4),**
6. Identify the location where the “HD NETWORK DELAY” cables are to be mounted (see Picture 5),
7. Remove the two plastic caps from the “IO connectivity metal panel” from the inside (shown in pictures 6).
8. First, carefully insert one BNC-SMB cable through the left whole of the “IO connectivity panel” (ref picture 7) and fix the BNC connector to the panel with the supplied washer and nut using a wrench n.13 (ref picture 8).
9. Second, carefully insert the remaining BNC-SMB cable through the right whole of the “IO connectivity panel” and fix the BNC connector to the panel with the supplied washer and nut using a wrench n.13 (ref. picture 9).
10. Connect the golden SMB connectors of the two BNC.CNM cables as shown in Picture n. 10.
11. Reconnect the Battery cable to the mother board and close the meter replacing the half metal shell and repositions all screws,
12. Switch on the HD PROTAB and verify that that the NETWORK DELAY screen is displayed by the analyzer.

**Picture 1a: “HD NETWORK DELAY” HW kit.**

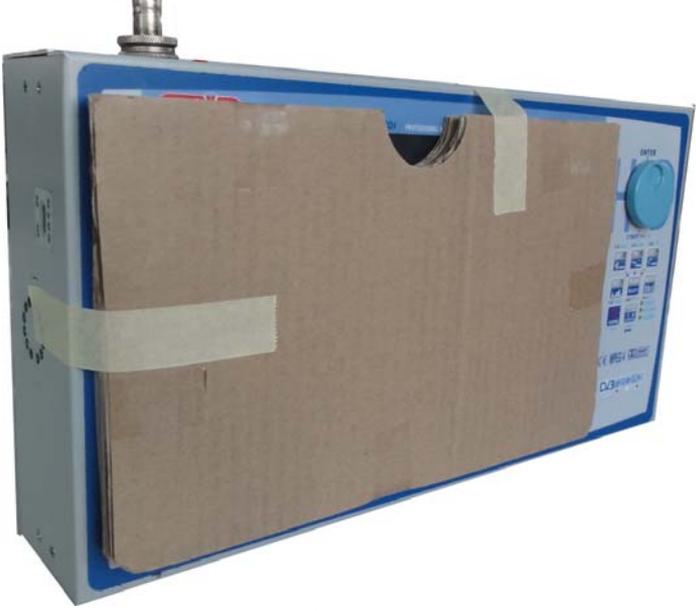
The HW KIT for the “HD NETWORK DELAY” app is made of :

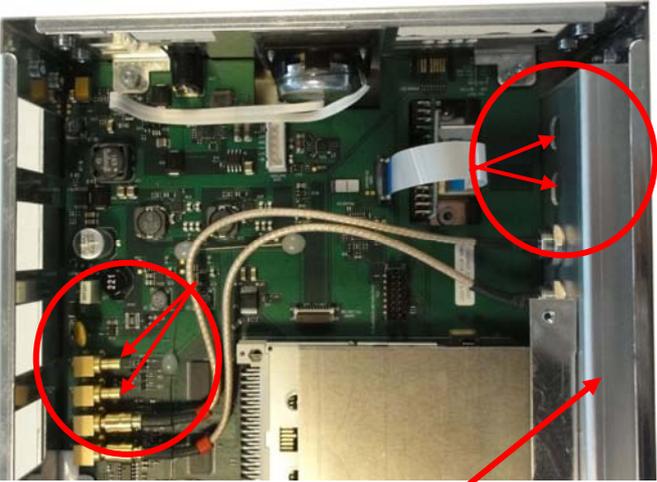
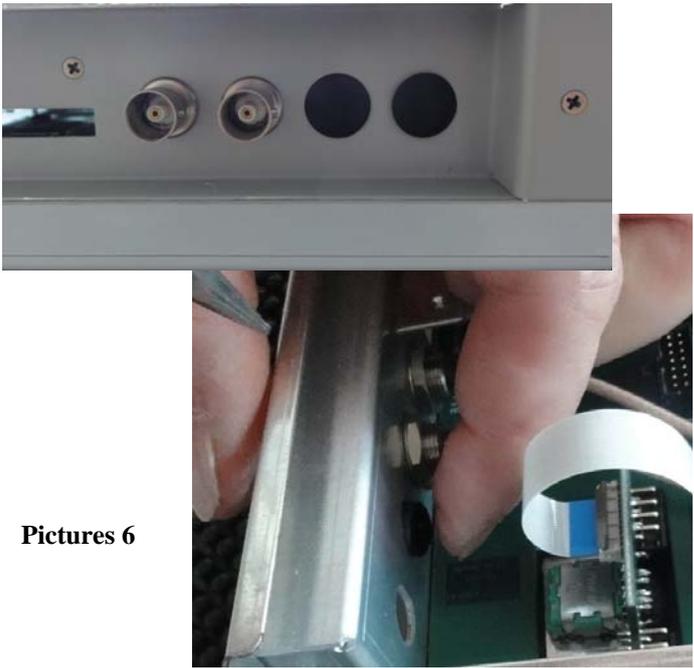
1. n.2 cables headed with female BNC/ male SMB golden connectors,
2. n.2 washers and nuts to fix the BNC cables to the HD PROTAB housing.

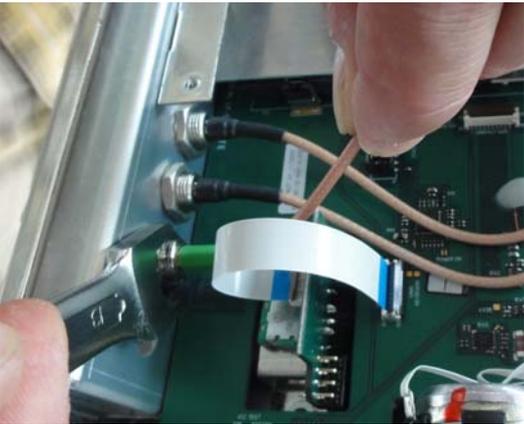
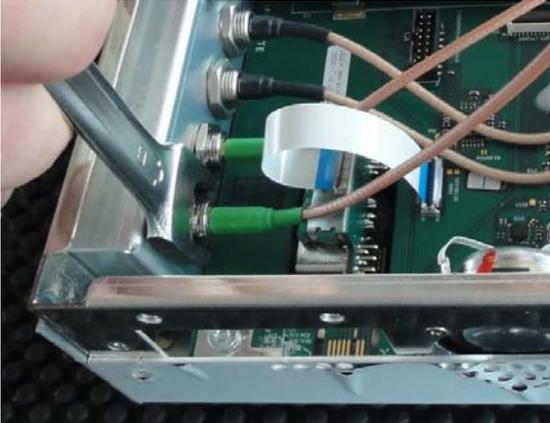


**Picture 1b: Wrench key n.13.** This picture shows a modified wrench (planed head) we use in our production to make it easier to access difficult points to tightening the nuts. This is just for information; **this tool is not included** with the HW kit of this app.

**SW & HW HD GPS RECEIVER APP installation procedure:**

Seq. #	pictures	Description
2		<p>Install the SMART Program in your PC. This can be done by downloading the SMART programme from Rover's WEB SITE: <a href="http://www.roverinstruments.com">www.roverinstruments.com</a>.</p> <p>Upload the HD NETWORK DELAY app to the HD PROTAB using the SMART program. Instructions to do this operation may be found in appendix A of this document.</p>
3	 <p style="text-align: center;">Picture 2</p>	<p>Remove the HD PROTAB from its protective bag and place a protection (i.e. carton) on top of the 10.2" touch screen using for example paper glue tape (see Picture 2).</p>
4	 <p style="text-align: center;">Picture 3</p>	<p>Remove the back metal housing shell using a screwdriver (Picture 3)</p> <p><i>Note:</i> <i>This picture has already the "HD NETWORK DELAY" cables installed.</i> <i>This picture is only to show the removal of the metal cover of the analyzer.</i></p>

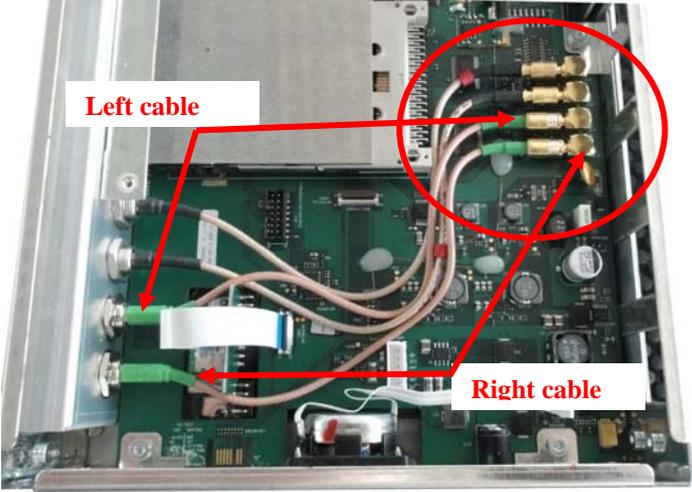
Seq. #	pictures	Description
5	 <p data-bbox="531 736 636 766">Picture 4</p>	<p data-bbox="959 280 1481 398"><b>WARNING:</b> <b>IF THIS STEP IS SKIPPED SERIOUS DAMAGAS COULD BE CAUSED TO THE HD PROTAB ANALYZER</b></p> <p data-bbox="959 436 1481 555">Disconnect the battery pack from the HD PROTAB by detaching the battery connecting cable from the motherboard (see Picture 4),</p> <p data-bbox="959 593 1481 739"><b>Note:</b> This picture has already the “NETWORK DELAY” cables installed. This picture is only to show the removal of the battery cables.</p>
6	 <p data-bbox="244 1323 349 1352">Picture 5</p> <p data-bbox="475 1330 826 1359">IO connectivity metal panel</p>	<p data-bbox="959 857 1410 943">Identify the location where the HD NETWORK DELAY cables have to be installed (see Picture 5),</p> <p data-bbox="959 981 1481 1066"><b>The red arrows show the position where both ends of the two “HD NETWORK DELAY” app cables will be connected.</b></p> <p data-bbox="959 1223 1458 1341"><b>NOTE:</b> The “IO connectivity metal panel” is where all the HD PROTAB sockets and slots are located.</p>
7	 <p data-bbox="244 1924 365 1953">Pictures 6</p>	<p data-bbox="959 1487 1469 1572">Remove the two plastic caps from the “IO connectivity metal panel” from the inside as shown in pictures 6.</p>

Seq. #	pictures	Description
8		<p>Carefully insert the BNC-SMB cable through the left hole of the “IO connectivity panel” first (ref picture 7).</p>
		<p>Then insert the washer and nut and fix the BNC connector to the “IO connectivity panel” using the wrench n.13 tool. (ref. picture 8).</p>
9		<p>Carefully insert the second BNC-SMB cable through the right hole of the “IO connectivity panel” first.</p> <p>Insert the washer and nut and fix the BNC connector to the “IO connectivity panel” using the wrench n.13 tool. (ref. picture 9).</p>

Picture 7

picture 8

Picture 9

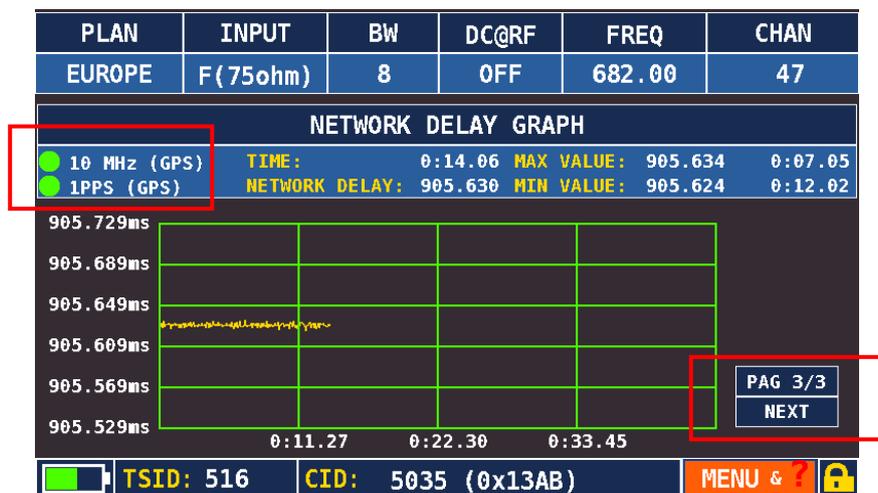
Seq. #	pictures	Description
10	 <p data-bbox="316 369 494 403"><b>Left cable</b></p> <p data-bbox="694 660 869 694"><b>Right cable</b></p> <p data-bbox="523 817 641 851"><b>Picture 10</b></p>	<p>Connect the golden SMB connectors as shown in Picture n. 10.</p>

Seq. #	Description
11	<ul style="list-style-type: none"> <li>• Reconnect the Battery cable to the mother board (see Picture 5).</li> <li>• Close the meter with the half metal shell and repositions all screws.</li> </ul>

12	<ul style="list-style-type: none"> <li>• Switch on the HD PROTAB and select the ASI-IP icon from the main menu while in TV measurement mode a digital DVB Channel MUX has been tuned.</li> </ul>
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- Verify that the NETWORK DELAY panel shows on page 3 of this menu selection:



IF the “HD GPS RECEIVER” app is installed, then the GPS signal may be used as a source for the 10MHz and 1 pps reference signal, to make the Network Delay measurements (see the upper red square in the picture above) otherwise the TV Transmission site reference signals have to be used for this purpose.

## APPENDIX A

### SW APP LOADING PROCEDURE:

#### WARNINGS:

1. Before loading a SW APP in your instrument, **close all applications running on your PC**: email, internet WEB browser, application programs, etc.;
2. Verify that the battery is charged and that the instrument is connected to the mains and most of all do not switch off or unplug the instrument during the APP loading. The instrument will automatically shut down after the APP has been loaded.

#### PROCEDURE:

1. Verify that you have installed on your PC the latest version of PC **S.M.A.R.T. PRO** interface program, available for free on our website;
2. Start the ROVER S.M.A.R.T. PRO program on your PC;
3. Click on "**Instrument**" and then on "**Connect Instrument**";
4. Click again on "**Instrument**" and then on "**Load Options**";
5. Select the "**APP**" file (this application file has the extension name ".bin");
6. Click on "**Open**" and wait until the loading is completed;
7. Switch the meter off and turn it on again and verify that the APP is working correctly.

**Note:** If the animated folder on your PC display that indicates that the APP loading is in progress seems to be blocked, do not stop the APP loading because this process is still in progress and will be completed normally.

#### ATTENTION:

In the event that the APP loading is interrupted or fails to be successful, we suggest that you check the USB cable connections and repeat the update procedure again from the beginning.