

R&S[®] SMW200A

Fast Data Alignment

Application Sheet

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1 Your Task

In test setups involving two or more instruments it can be required, that the instruments use the same or similar settings. The general straightforward approach is to store the instrument's configurations in save/recall file, to transfer and load this file to the other instruments and subsequently adjust the required settings.

You can use an USB stick or connect both instruments to a LAN and rely on any of the standard file transfer methods. However, if you have to perform several interactions in readjusting and transferring settings the standard, file transfer approach might be time consuming.

How about automating the file transfer and speeding up the configuration?

2 Possible Solution

Imagine an example of a setup that requires data alignment between two R&S SMWs, like for example two instruments that generate the same signal but using different frequencies. The instrument that will be configured first usually acts as a "master"; the second R&S SMW is referred as a "slave".

This example shows you how to align the settings by pressing subsequently the USER key on the "master" and "slave" instruments.

Prerequisites

We assume that the following applies for both R&S SMW:

- the LAN interfaces are enabled
- the SMB (Samba) protocol is enabled
- the instruments are connected to a LAN
- the IP addresses are known

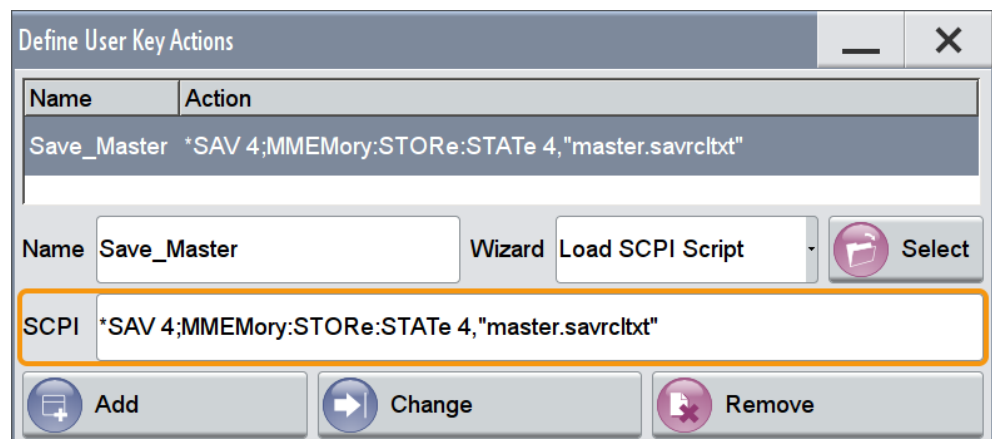
We also assume that the first R&S SMW (i.e. the "master") is configured to generate the required signal. To simplify the example and because the instrument's configuration itself is of no importance, this configuration is not described.

3 How to Configure the R&S SMWs

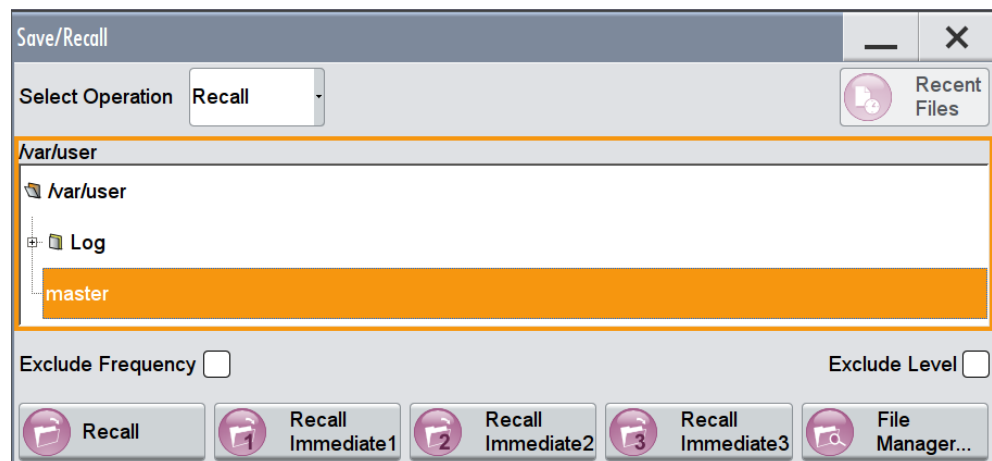
To configure the "Master"

In the first R&S SMW perform the following:

1. Select "SETUP > User Interface > Define User Key".
2. Define a new action with the following settings:



3. Press the USER key.
The instrument settings are saved into the `master.savrc1txt` file.
4. Press the SAVE/RCL key and open the `/var/user/`.

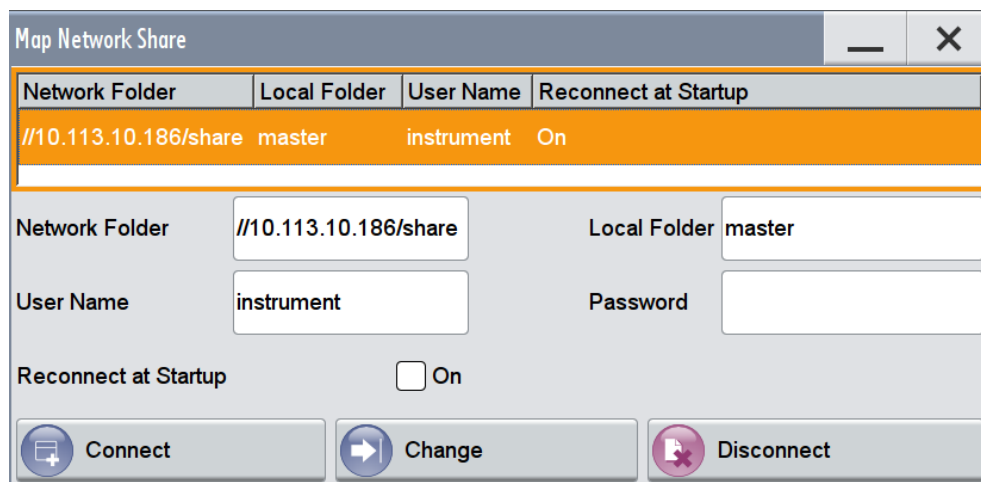


The display confirms that the setting file `master` is created.

To configure the "Slave"

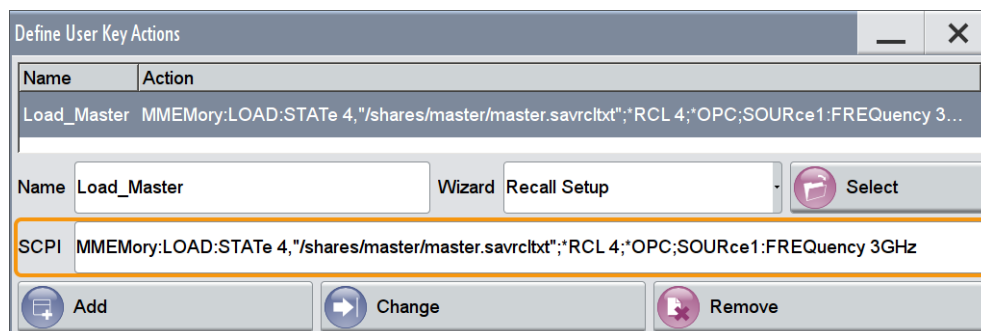
In the second R&S SMW perform the following:

1. Select "SAVE/RCL > File Manager > Map Network Share" to mount the user directory of "master" instrument on the "slave".
2. In the "Map Network Share" dialog, perform the following:
 - a) select "Network Folder" = `//<IP address>/share`
 - b) select "Local Folder = master"
 - c) select "User Name = Instrument" and enter the "Password" (default password is *Instrument*)
 - d) select "Connect".



3. Select "SETUP > User Interface > Define User Key".
4. Define a new action with the following settings:
 - a) Select "SCPI" and enter


```
MMEMemory:LOAD:STATE 4,
"/shares/master/master.savrc1txt";*RCL 4;*OPC;
SOURCE1:FREQUENCY 3 GHz
```



To align the R&S SMWs

1. On the "master" instrument, (re)adjust the settings and press USER.
 2. On the "slave" instrument, press USER.
- The instruments are aligned automatically.

4 Possible Extensions

Consider the following:

- Extend the SCPI line with any required configuration, like for example the configuration of the reference frequency source or the configuration of the baseband signal.

Try out the following:

- SOURce1:ROSCillator:SOURce EXT
- SOURce1:BB:EUTRa:TRIGgger:SOURce EGT1
- Make use of the integrated SCPI recording function of the instrument to automatically generate SCPI lists.
Open the context menu and try out the following:
 - select "Show SCPI command"
 - select "Start automatic/manual SCPI recording"

5 Learn More About the R&S SMW

For a comprehensive description of the R&S SMW capabilities and features including the remote control refer to:

- the R&S SMW embedded help
- the R&S SMW user manual
The latest version is available for download at the product homepage
<http://www.rohde-schwarz.com/product/SMW200A.html>.

See also:

- application note 1GP98 "SCPI Recorder-Test Automation at your Fingertips"