Remote Control of ROMES on Windows 7 Application Note 1SP15

Products:

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| R&S[®]ROMES | R&S[®]TSMx

T

- | R&S[®]TSMW
- | R&S[®]TSMW-Z3



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1 Introduction

For optimization of mobile communication networks, drive tests with coverage measurement systems are being performed. The coverage measurement platform provided by Rohde & Schwarz is based on R&S® ROMES, which is the application software to define and setup measurement devices, acquire and store the measurement data and displaying measured data during the measurement period and a later replay.

Additional drivers are used for attaching different measurement devices, such as the Rohde & Schwarz Universal Radio Network Analyzers TSMQ or TSMW or test mobiles from different manufacturers. Depending on the required measurement tasks, R&S® ROMES can be configured freely to adapt to the user's needs.

As long as the measurements are performed in an outdoor environment using a vehicle traveling around, size and weight of the measurement system is not a problem. As more and more measurements are performed in an indoor environment by walking around, size, weight and mechanical handling is an issue of interest. ROMES® can be used in a light weight configuration, which is small enough to be carried in a back pack. For use of R&S® ROMES with R&S® TSMW in an indoor environment, the Backpack System R&S® TSMW-Z3 has been designed. The system includes a mini PC with R&S® ROMES which needs to be controlled remotely.

This application note describes, how to establish a Wireless Lan Access Point on the R&S® ROMES PC and to setup a wireless LAN connection between an Apple iPad® and the mini PC.

Section 2, "Preparations of Windows on the server" on page 4 describes how to configure Windows 7 for best use with R&S® ROMES in a remote session and how to set-up and configure the WiFi network on the R&S® ROMES machine.

Section 3, "Setup a remote connection", on page 14 describes how to configure and start the remote desktop sessions on both, an iPad client and a Windows 7 PC. A short selection guide for the appropriate App on iPad is also given.

Section 4, "Tips for Remote Controlled Sessions", on page 35 gives some further hints on the configuration and use of the sessions.

Note: this application note takes only the settings of Windows 7 into account. Please refer to the application note 1SP51, for settings on Windows XP.

Please note:

Throughout this manual, TSMW is generally used as an abbreviation for the Universal Radio Network Analyzer R&S® TSMW.

R&S® ROMES4 Drive Test Software is referred to as ROMES throughout this document.

Microsoft® Windows 7 is referred to as Windows throughout this document Apple iPad® is referred to as iPad throughout this document.

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Recommended user settings

2 Preparations of Windows on the server

This section describes the recommended windows settings for use with a remote session and with a ROMES measurement.

Note: This document describes only settings on Windows 7. Windows XP is handled in the application note 1SP51.

2.1 Recommended user settings

Measurements with ROMES need to be performed with administrator rights. Therefore it is recommended to setup the user as an administrator user.

Remote login to Windows can only be granted for users whose login is protected by a password. Therefore it is not possible to activate an auto login on machines, which shall be remotely controlled.

To create a user with both properties perform as follows:

Start \rightarrow control Panel \rightarrow User Accounts and Family Safety \rightarrow Add or remove user accounts

Create a new account \rightarrow enter account name, e.g. "ROMES", select "Administrator" \rightarrow Create Account

Click on the newly created account \rightarrow Create a password \rightarrow enter the password twice and optionally a password hint.

2.2 Power options

By default, Windows shuts down the computer after e.g. 15 minutes without user interaction such as a keyboard stroke or a mouse movement. Since measurements with ROMES can run fully without any user interaction, Windows may shut down the computer after 15 minutes. To prevent this, change the default power options, again in the control panel:

Control Panel \rightarrow Hardware and Sound \rightarrow Power Options Create a power plan \rightarrow High performance (name it, e.g. ROMES) "Turn off the display": keep 15 minutes

Visual effects

2.3 Visual effects

Windows has got a lot of smart and nice looking desktop effects. These, however, cost a lot of performance of the desktop computer and graphic card. Especially, when the PC is remotely controlled, these effects require a lot of network bandwidth and slow down the real time display of each measurement system. It therefore is highly recommended, to reduce visual effects of the desktop to a minimum. The following tips have been taken directly from Microsoft web site (<u>http://windows.microsoft.com/en-US/windows7/Optimize-Windows-7-for-better-performance</u>).

2.3.1 Turn off visual effects

If Windows is running slowly, you can speed it up by disabling some of its visual effects. It comes down to appearance versus performance. Would you rather have Windows run faster or look prettier? If your PC is fast enough, you don't have to make this tradeoff, but if your computer is just barely powerful enough for Windows, it can be useful to scale back on the visual bells and whistles.

You can choose which visual effects to turn off, one by one, or you can let Windows choose for you. There are 20 visual effects you can control, such as the transparent glass look, the way menus open or close, and whether shadows are displayed.

To adjust all visual effects for best performance:

- 1. Open Performance Information and Tools by clicking the Start button (1), and then clicking Control Panel. In the search box, type Performance Information and Tools, and then, in the list of results, click Performance Information and Tools.
- 2. Click Adjust visual effects. 💱 If you're prompted for an administrator password or confirmation, type the password or provide confirmation.
- Click the Visual Effects tab, click Adjust for best performance, and then click OK. (For a less drastic option, select Let Windows choose what's best for my computer.)

2.3.2 Save the setting to a theme

Open the control panel again (or click on "control panel home" on the upper left corner anywhere in the control panel) and click on "Change the theme" in "Appearance and Personalization". The currently created theme is displayed as "Unsaved Theme" in the section "My Themes". Right-click this theme an select "Save theme".

Enter a name of your choice in the next dialog.

Enable Remote session



Change the visuals and sounds on your computer

You may switch between the various themes later on at any time.

2.4 Enable Remote session

To be able to open a Remote Session on the measurement PC, it is necessary to allow remote sessions for at least one user.

Open the Control Panel \rightarrow System and Security \rightarrow Allow remote access (in Section System)

Remote \rightarrow Remote Desktop: Allow connections from computers running any version of Remote desktop (less secure)

Enable Remote session

	Hardware	Advanced	System Protection	Remote
Remote Assist	ance			
Allow Rem	ote Assistand	ce connectio	ns to this computer	
What happens	s when I ena	ble Remote /	Assistance?	
			A	dyanced
Remote Deskt	ор			
Click an optior	n, and then s	pecify who c	an connect, if need	ed.
	connections	s to this comp	outer	
O Don't allow	CONTROCTION			
Don't allow	connection.	compiton a		21
 <u>D</u>on't allow Allow conn Remote De 	ections from sktop (less s	computers n secure)	unning any version o	f
 <u>D</u>on't allow <u>Allow conn</u> <u>Remote De</u> <u>Allow conn</u> <u>Desktop w</u> 	ections from esktop (less s ections only ith <u>N</u> etwork	computers n secure) from comput Level Authen	unning any version o ers running Remote tication (more secur	f] e)
 Don't allow Allow conn Remote De Allow conn Desktop w 	ections from esktop (less s ections only ith <u>N</u> etwork	computers n secure) from comput Level Authen	unning any version o ers running Remote tication (more secur	f] e) lect Users

Note: if you plan to connect to the measurement computer only with a Windows computer, you can select "Allow connections only from computers running..." also.

Click on Select Users \rightarrow Add ... \rightarrow enter "ROMES" \rightarrow Check Names: the name expands to e.g. TSMW-Z3P46\ROMES.

Select this object type:		
Users or Built-in security principals	Qbjec	ct Types
From this location:		
TSMW-Z3P46	Loc	ations
Enter the object names to select (examples);		
TSMW-Z3P46\ROMES	Chec	sk Names
Advanced		Cancel

Click OK

2.5 Setup the Wireless Access Point

Starting with Windows 7, Windows can provide a Wireless Access Point. However, this type of network can only be configured using the command line tool "netsh". Furthermore, it is not guaranteed, that the Wireless Access Point can be established with any hardware. As this network has many advantages over the ad-hoc network, it is described in this application note:

- Easier access from a client computer
- embedded DHCP server for clients
- pre-defined and well known TCP/IP address: 192.168.173.1
- More stable than an ad-hoc network
- Compatible with iPads
- WPA2 encryption instead of WEP

2.5.1 Create the Access Point

The access point must be created once before it can be used. This must be done in the command shell.

Open a command shell with administrator rights:

Windows Start \rightarrow All programs ... \rightarrow Accessories. Right click on "command prompt" and select Run as administrator

	all an anna	
Accessories Bluetooth File	Transfer	
Command Dre	trees	10
🕮 Connect to	Open	
🞑 Connect to 🗳	Run as administrator	
 Getting Sta Math Input Notepad Paint Remote De Run Spinping T 	Open file location Pin to Taskbar Pin to Start Menu Restore previous versions Send to	•
Sticky Note	Cut Copy	nel
😽 Sync Cente 🏹 Windows E 强 Windows N	Delete Rename	d Pr
MordPad	B	

A command shell opens.

Enter a line like follows (must be entered in one single line):

netsh wlan set hostednetwork mode=allow ssid=TSMW-Z3P46-ROMES key=******* keyusage=persistent

Note: the key must have exactly 10 characters.

The system responds with:

The hosted network mode has been set to allow. The SSID of the hosted network has been successfully changed. The user key passphrase of the hosted network has been successfully changed.

To check the network, you may type in:

netsh wlan start hostednetwork

The system responds with:

The hosted network started

check with:

```
netsh wlan show hostednetwork
```

```
Hosted network settings

Mode : Allowed

SSID name : "TSMW-Z3P46-ROMES"

Max number of clients : 100

Authentication : WPA2-Personal

Cipher : CCMP

Hosted network status

Status : Started

BSSID : 00:23:14:24:cf:b1

Radio type : 802.11g

Channel : 11

Number of clients : 0
```

The WLAN network is ready to be used.

2.5.2 Create a task to start the network at system start

The WLAN network just created is stopped after reboot, so it must be started again after any reboot. To be able to log into the computer via remote desktop, the WLAN network must be started at system start automatically. This can be done via a Windows task that starts at system start. Windows tasks can be created and configured in the control panel.

Open the Control-Panel \rightarrow System and Security \rightarrow Schedule tasks (in section Administrative Tools).

Click on "Create Task" (right corner, "Actions"). Enter a name (e.g. start_wlan), don't change Location, enter a description, click "Run whether user is logged on or not" and enable "Run with highest privileges".

seneral Trig	gers Actions	Conditions	Settings		
Na <u>m</u> e:	start_wlan				
Location:	١				
Author:	TSMW-Z3P46\ROMES				
<u>D</u> escription:	Starts the ho	ted netword	l at system start		
Security opt	ions	e the followi	ng user account:		
TSMW-Z3P	46\ROMES				Change User or Group
© Run on	y when user is l	ogged on			
🔘 Run <u>w</u> he	ether user is log	ged on or no	ot		
📰 Do r	ot store <u>p</u> asswo	ord. The tasl	k will only have access t	o local computer r	esources,
🔽 Run w <u>i</u> tl	n highest privile	ges			
Hidden	Configu	e for: Win	dows Vista™. Windows	Server™ 2008	

Select the "Triggers" tab.

Click "New...", and select "At startup" in "Begin the task"; Click "OK".

Settings	At start	up			Υ.	
No additiona	l settings	required.				
Advanced sett	ings for:	15 minut	tes 💌	T		
🔲 Repeat tas	k every:	1 hour	*	j .	for a duration of:	1 day 🔹
🔲 Stop	all runni	ng tasks at	t end of rej	petition du	ration	
📃 Stop task	if it runs <u>l</u>	onger thar	n: 3 days			
Activate:	22,01,201	1 💷 +	21:37:24	-8-	Synchronize	across time zones
	22.01.201	12 💷 🖛	21:37:24	-	Synchronizg	across time zones
Expire:						

Select the "Action" tab.

Click "New...", Click "Browse..." and select C:\Windows\System32\netsh.exe. Note: the path may vary with the windows version. Enter "wlan start hostednetwork" in "Add arguments (optional)".

Act <u>i</u> on:	Start a program	*
Setting	5	
Progr	am/script:	
C:\Wi	ndows\System32\netsh.exe	Browse
Start i	n (optional):	

The system asks for the password of the user (here: ROMES):

	GER
Enter user accour	it information for running this task.
Password:	••••

After the next system start, the Wlan is active even before any user logs into the system.

3 Setup a remote connection on the client

3.1 On an iPad

3.1.1 Get an appropriate APP

3.1.1.1 Remote desktop clients

There are several remote desktop clients available in the App Store. Select any App of your choice. The App should support at least:

- Fast Screen update
- Support of right mouse key
- Full screen display on the iPad
- Keep sound on remote computer (only, if SQA measurements are required, see section 4.1, "Sound Control and SQA" on page 35 for further explanation).

The following clients have been tested:

- Mocha Remote Desktop Lite, Version 2.5 (<u>www.mochasoft.dk/iphone_rdp.htm</u>) (no support of the right mouse key in the Lite version, however free of charge)
- iRdesktop, version 1.0.5, <u>www.iRdesktop.com/support</u>
- iTap RDP, version 1.7.2.15298 (<u>http://itap-mobile.com/itap-rdp</u>)

The screenshots of this document have been made with iTap RDP.

3.1.2 Establish a WLAN connection

A connection to the WLAN just created on the remote PC must be established prior a remote desktop session can be started.

Type on "Settings" on the Desktop of your iPad:

Setup a remote connection on the client

On an iPad



Type on "General" and then "Network".

	C nor eninging -
General	
About	>
Usage	>
En	
Sounds	>
Network	>
Bluetooth	Off >
Spotlight Search	>
Auto-Lock	5 Minutes >
Passcode Lock	Off >
Restrictions	Off >
Use Side Switch to:	
Lock Rotation	~
Mute	
Date & Time	
	General About Usage Sounds Network Bluetooth Spotlight Search Auto-Lock Passcode Lock Restrictions Use Side Switch to: Lock Rotation Mute Date & Time

Cattings		Naturale
	General	Network
Wi-Fi 7_Tulpen	VPN	Not Connected >
Notifications On		
Location Services Off	Wi-Fi	7_Tulpen ≯
Cellular Data		
🙀 Brightness & Wallpaper		
Picture Frame		
General		
Mail, Contacts, Calendars		
A Safari		
iPod		
Video		
notos		
Notes		
Store		
Apps		

Type on "Wi-Fi" (an active Network connection may be indicated on the right of the bar).

Wait a while until all available Networks are displayed. Type on the Network defined in the PC (TSMW-Z3P46-ROMES, in our example).

و ج 🔒
۵ ج 🙆
📀 🗢 🖻
>
ON

Enter the password (exactly 10 characters).

	Cancel	Enter the password for "TSMW-Z3P46-ROMES Enter Password	10
Password eeeeeee	Password		

You may examine the connection parameters by typing on the right arrow of the active network.

7_Tulpen	2 🕈 📀
EasyBox-6F8D36	A 🗢 🧕
✓ TSMW-Z3P46-ROMES	A 7 0
Other	>

The IP address of the client must be 192.168.173.x and the IP address of the router and DNS server 192.168.173.1.

DHCP	BootP	Static	
IP Address		192.168.173.172	
Subnet Mask		255.255.255.0	
Router		192 <mark>.168.173.1</mark>	
DNS		192.168.173.1	
Search Domains		mshome.net	
Client ID			

3.1.3 Prepare and configure a remote desktop connection

In this document, the setup of iTap RDP is described as an example. However, the principal settings should not differ too much for the different Apps.

Start the App of your choice.



A dialog with the basic settings opens. Enter at least

- the label of the connection,
- the IP address of the host
- you may enter username and password ("credentials")
- set colors of the screen to at least 16 bit, and the resolution to at least 1024x768

DOOKMARK		Ľ
Host		
Label:	ROMES remote	>
Host:	192.168.173.1	>
Port:	3389	>
NLA (Network Level Authentication)		
Credentials		
Credentials:	romes	>
Store Credentials:	ON]
Settings		
Screen:	1024x768x16	>
Advanced		>

Enter the "Advanced" settings. Select "Play on Server" in the Sound section, (only, if SQA measurements are required, see section 4.1, "Sound Control and SQA" on page 35 for further explanation).

-
2
)
2
>
)
>
2
>
2
0 Minutes

Type on "Bookmark" to return to the basic settings. Type on "Save" to save the settings.

That's it.

3.1.3.1 Screenshots for RDP Lite

As a first starting App, RDP Lite, which is free of charge, may be chosen to test the WiFi connection. However, this tool does not support the right mouse click, so it may not be used in every days work. Configuration is quite similar to the one of iTap, here are the screen shots of a

configuration is quite similar to the one of 11 ap, here are the screen shots of a configuration, which has proven to work.

Setup a remote connection on the client

On an iPad

Mocha RDP Lite	4	Configure	ð)	
lasks		Windows PC		
Connect	>	PC Address PC name or IP address	192.168.173.1	0
Configure	>	PC Port	3389	
Wake Up	>	PC User (entional)		
Delete and Move	>	User ID for the Windows PC	romes	
Add another Server	>	PC Password (optional) Typing a password here, gives less security	••••	
More		Mac Address (optional) Only used for WOL (Wake on LAN)	<optional></optional>	
Macros	>	WOL port		
Quick Guide	>	Wake on LAN port (optional)	9	
About	>	WOL broadcast Wake on LAN uses broadcast	ON	
Help		WOL send ping Wake on LAN uses ping	ON	
		Name (optional) Any alias name for the session	ROMES-remote	
		More		
		PC keyboard type Active keyboard driver on the Windows PC	US	>
		Screen size	1024 x 768	>
Mocha RDP Lite		Configure	9	1
Tasks		PC keyboard type Active keyboard driver on the Windows PC	US	>
Connect	>	Screen size	1024 x 768	,
Configure	>	A smaner screen gives taster display		
Wake Up	>	Use either 8 or 16 bit color mode	ON	_
Delete and Move	>	Mouse at finger Drag/hover mouse at finger or from cursor	ON	
Add another Server	>	Show warnings		FF
More		Chaptery low on memory warnings		
Macros	>	Show a green circle at finger tap	ON	
Quick Guide	>	View only mode Ignore keyboard and mouse input	C	FF
About	>	Motions		_
		Build in accelerometer scrolls the screen	ON	

1SP15_0E

Help

۶

Wireless keyboard

Key click

Using a Bluetooth keyboard

Extra keys gives a click sound Toggle black toolbar

Close session on exit

Shake the device to show/hide the toolbar

Close RDP session when program enter background mode

OFF

ON

OFF

OFF

3.1.4 Establish a remote desktop connection

Start the Wi-Fi network and connect to the TSMW-Z3 Network as defined previously. Start your remote desktop App, e.g. the iTap RDP.

Select the previously defined server ("ROMES remote") and type on "Connect".



As the credentials have been defined and stored in the profile, the user gets automatically logged into the Windows session. You can directly start ROMES as if directly logged into the computer.

3.2 On a Windows PC

Windows ships with all tools necessary to setup a WLAN connection and a remote desktop session with a remote desktop server. This section describes, how to setup and configure these tools.

3.2.1 Establish a WLAN connection

Click on the WLAN icon in the lower right corner of the desktop:



If the remote computer is on air, the network should be contained in the list of available networks:



Click on the network "TSMW-Z3P46-ROMES". The tool tip disappears and a preselected checkbox and a button occur:

*	+7	Currently connected to:
		7_Tulpen Internet access
	work s	No network access
E	^	Dial-up and VPN
	3	DQA Dialup Vodafone D2
	tion 🔦	Wireless Network Connecti
	Connected 🚚	7_Tulpen C
	.ail	TSMW-Z3P46-ROMES
	/ <u>Connect</u>	🗹 Connect automatically
	in.	EasyBox-6F8D36

Click on "Connect". Enter the password in the next dialog

Type the netwo	rk security key	
Security key:	Hide characters	
		OK Cancel

In case of success, the following tooltip is shown, if the mouse if moved over the WLAN icon:



Note the yellow exclamation mark: this is normal, as the network has no access to the internet.

3.2.2 Prepare and configure a remote desktop connection

The remote desktop client can be found in Accessories in the Windows Start menu. Start \rightarrow All Programs \rightarrow Accessories \rightarrow Remote Desktop Connection



The Remote Desktop Connection starts with the following dialog:



Click on "Options" to edit the connection options to appropriate values.

In the first tab enter remote machine name and user name. The password may be saved, if you like, as it is more convenient, but of course more insecure.

	Remote Desktop Connection
ieneral	Display Local Resources Programs Experience Advanced
Logon s	Enter the name of the remete computer
	Eriter the name of the remote computer.
	Computer:
	User name: ROMES
	You will be asked for credentials when you connect.
	I Allow me to save credentials
Connect	ion settings
1	Save the current connection settings to an RDP file or open a saved connection.
	Save Save As Open

The "Display"-Tab may be kept unchanged.

General	Display Local Resources Programs Experience Advanced	
Display	configuration	
	Choose the size of your remote desktop. Drag the slider all the way to the right to use the full screen.	
0	Small Large	
	Full Screen	
	Use all my monitors for the remote session	
Colors		
Colors	Choose the color depth of the remote session.	
Colors	Choose the color depth of the remote session.	

In the tab "Local Resources", remote audio must be configured, if SQA measurements are required, see section 4.1, "Sound Control and SQA" on page 35 for further explanation.

-	Remote Desktop Connection
ieneral D	isplay Local Resources Programs Experience Advanced
Remote at	udio Configure remote audio settings, Settings
Keyboard	Apply Windows key combinations:
9	Only when using the full screen 👻
	Example: ALT+TAB
Local devi	ices and resources
-	Choose the devices and resources that you want to use in your remote session.
	V Printers
	More

For SQA jobs, remote audio playback must be set to "play on remote computer". If ROMES events are used, remote audio playback should be set to "Play on this computer".

Remote D	esktop Connection	🙆 💌
4	Remote Desktop	
Remote	audio playback	
	Play on this computer	
N N	Do not play	
	Ply on remote computer	
Remote	audio recording	
1	Record from this computer	
4	O not record	
		OK Cancel

Local resources may be configured to enable data transfer with the remote PC. A data drive, e.g. drive "D" may be made accessible via network drive on the remote machine:

No Remote Desktop Connection	4	×
Remote Desktop		
Local devices and resources		
Choose the devices and resources on this computer that you wa use in your remote session.	int to	
📝 Smart cards		
Ports		
🛛 🗖 Drives		•
E:) DVD RW Drive		
[M:] view (\)		=
P:) DATA		-
Other supported Plug and Play (PnP) devices		-
Which Plug and Plau devices can Luse in mutemote session?		
Which had and hay devices early use in my tempte session.		
		- 1
	Cano	cel

Programs may be kept as set by default.

ieneral	Display Local Resources Programs Experience Advanced
	Start the following program on connection: Program path and file name: Start in the following folder:

In the tab "Experience", the amount of visual effects transferred via LAN can be configured according to your personal needs. Default is shown in the next figure:

ieneral	Display Local Resources Programs Experience Advanced		
Performa	nce		
14	Choose your connection speed to optimize performance.		
	Low-speed broadband (256 Kbps - 2 Mbps) 🔹		
	Allow the following:		
	Desktop background		
	Font smoothing		
	🛄 Desktop composition		
	Show window contents while dragging		
	🥅 Menu and window animation		
	Visual styles		
	🔽 Persistent bitmap caching		

The settings in the "Advanced" tab can be left as per default.

General	Display Local Resources Programs Experience Advanced
Server	authentication
9	 Server authentication verifies that you are connecting to the intended remote computer. The strength of the verification required to connect is determined by your system security policy. If server authentication fails:
	Connect and don't warn me
	What are my server authentication options?
Conne	ct from anywhere
6	Configure settings to connect through Remote Desktop Gateway when I am working remotely.

Do not forget to save these settings in the end. This can be done in the "General" tab again. Click on "Save As \dots " button and save the Settings to a file of your choice.

Note: the extension of this file should be "RDP"

Remot	e Desktop Connection Connection Connection Connection Connection		
General	Display Local Resources Programs Experience Advanced		
Logon	settings		
	Enter the name of the remote computer.		
20	Computer: tsmw-z3p46		
	User name: ROMES		
	You will be asked for credentials when you connect.		
	Allow me to save credentials		
Connec	tion settings		
1	Save the current connection settings to an RDP file or open a saved connection.		
	Save Save As Open		
🗻 Optic	ons Gonnect Help		

3.2.3 Establish a remote desktop connection

Make sure that the WLAN connection has been established.

Double click on the file saved as described in the previous section. A dialog opens. Click on "connect". A warning occurs. Click on "Don't's ask me again…" and then on "Connect".

After a while the Windows Security dialog opens. Enter the password and click "Remember my credentials", if you like.

The session should open as:

	:5			
			-	
Use a	nother acco	unt		
Insert	a smart car	d		

🐻 Remo	te Desktop Connectio	n 🛃	×
ا 💎	Do you trust this rem	ote connection?	
This rem remote c	ote connection could ha computer before you con	rm your local or remote computer. Make sure that you trust the nect	9
	Туре:	Remote Desktop Connection	
20	Remote computer:	tsmw-z3p46	
💽 on'i	t ask me again for conne ails	ctions to this computer	

Sound Control and SQA

4 Tips for Remote Controlled Sessions

4.1 Sound Control and SQA

The RDP protocol allows to transfer sound from the server ("host") to the client machine. On Windows PCs, this is the default setting. While this is desired for multi media machines, where the host serves music which are listened to at the client PC, measurements with ROMES require a different mode.

If SQA measurements are performed on the remote machine, the sound must remain on the host, see sections 3.1.3, "Prepare and configure a remote desktop connection" on page 18 and 3.2.2, "Prepare and configure a remote desktop connection", on page 25.

If no SQA measurements are performed, but the sound should be heard on the client, then the RDP session must be configured to "play on device".

Correct settings can easily be checked by playing any sound file on the remotely controlled PC. If the sound can be heard on the remote computer, SQA measurements are possible, if it can be heard on the client PC, then SQA measurements are impossible, but sound events can be routed from server to the client PC.

4.2 Power Down and Restart

Power down resp. restart of Windows is disabled in the Windows Start Menu for remotely controlled sessions by default. This is convenient for Windows Servers which rarely are powered down in normal circumstances. However, a measurement system needs to be powered down daily and needs to be rebooted from time to time, e.g. after new hardware has been installed. To be able to reboot or shut down a remote session, a command "shutdown" is available on Windows, which may be run directly.

Click on Start → Run ... and enter

shutdown -r

to reboot the computer.

Click on Start → Run ... and enter

shutdown -s

to shut down the computer.

It is convenient to establish two batch jobs containing these commands and store them on the desktop. Take care to name these **not** shutdown.cmd, as in this case Windows recursively calls the job (shutdown.cmd) and not built in command reboot.exe.

5 Literature

[1] **1SP51_1E**, Remote Control of ROMES with a Pocket PC

6 Additional Information

This Application Note is subject to updates and extensions. Please visit <u>our website</u> in order to download new versions. Please send any comments or suggestions about this application Note to <u>TM-Applications@rohde-schwarz.com</u>

7 Ordering Information

Ordering Information				
Drive Test System				
ROMES	Drive Test Software	1117.6885.04		
ROMES-T1W		1117.6885.02		
TSMW	Universal Network Analyzer	1503.3001.03		

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