

# R&S®SFC / SFC-U

## Compact Modulator /

## USB Compact Modulator

### Release Notes

### Firmware Version 02.00

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81671 Munich, Germany

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The following abbreviations are used throughout this document:

R&S® Compact Modulator / USB Compact Modulator is abbreviated as R&S SFC / SFC-U.

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# 1 Information on the Current Version and History

## 1.1 Version 02.00

- Released: June 2012

### New Functionality

- SFC-U supported
- DVB-C2 (R&S SFE-K17): Multi-PLP/Single D-Slice is supported
- Digital IQ (R&S SFx-K80): Info interface is available
- Audio BC (R&S SFx-K170): FM RDS: 0x0D terminating character missing
- Audio BC (R&S SFx-K170): FM RDS: Editor accept extended keyboard entries
- Audio BC (SFC-K170): AM radio removed from SFC / SFC-U GUI
- DMB Streams France (R&S SFU-K229) supported
- DVB-S (R&S SFU-K2): Additional roll off factor 0.20 for DIRECTV application added
- DVB-S2 (R&S SFx-K8): Symbol rate extended to meet NORDIG standard
- DVB-T2 (R&S SFx-K16): Additional SCPI scripts available
- DVB-T2 (R&S SFx-K16): MISO/SFN supported
- ISDB-T (R&S SFx-K6): Default value of AC Data corrected (now ALL1)
- ISDB-Tmm waveforms (R&S SFU-K365) supported
- New software update process established
- Remote: Zeroconf and mDNS to ease the direct network connection is supported
- TsGen: TS libraries LIB-K70, K71, K72 and K73 supported
- RF: Frequency adjustment process improved
- Display of Device ID supported

### Fixed Issues

- DVB-T2 (R&S SFE-K16): Maximum number of PLP is limited to 6
- DVB-T2 with T2MI=ON: Channel Bandwidth = 6, 7 MHz is not working correctly
- "TX RECALL: OPTION MISSING" is shown after installing new option and switching to new option
- Audio BC (R&S SFx-K170): Preemphasis calculation af frequency below 1kHz is missing

- Audio BC (R&S SFx-K170): RDS: Open Format: Some groups are not accepted by clicking APPLY
- EMC Test streams (R&S SFU-K228): Audio isn't seamless
- DVB-T2 (R&S SFE-K16): T2MI=ON: Channel Bandwidth = 6, 7 MHz is not working correctly
- Remote: Command error at READ:IQC:TDMB:PROT:PROF and LEV
- SETUP: ADJUSTMENT ALL does not work without SFC-K83 (extended frequency range)
- T-DMB/DAB (R&S SFU-K11): Wrong Null symbol in transmission mode 3

#### **Known Issues**

- SFC-U: Remote Desktop with Windows XP not yet supported
- SFC TsGen doesn't start properly if TX standard is switched to DTMB. TsGen needs to be stopped and restarted.
- ATSC-MH (R&S SFC-K18): In some rare cases the following warning occurs even if the data rate is correct: DATARATE OUT OF RANGE, DATARATE TOO LOW, DATARATE TOO HIGH

## **1.2 Version 01.00**

- Released: June 2011

#### **New Functionality**

- Initial Version

#### **Known Issues**

- DVB-T2 (R&S SFE-K16): Maximum number of PLP is limited to 6.
- DVB-T2 with T2MI=ON: Channel Bandwidth = 6, 7 MHz is not working correctly.

## 2 Modifications to the Documentation

The current documentation is up-to-date.

## 3 Firmware Update and Installation

Your instrument is delivered with the latest firmware version available. Firmware updates are provided on the Rohde & Schwarz Home Page (<http://www.rohde-schwarz.com/downloads/firmware/sfc.html>), by Rohde & Schwarz service centers or sales offices.

You can install the new firmware version by using either the USB or the LAN interface:

- For an update using the USB interface, store the downloaded update files on a memory stick.
- For an update using the LAN interface (due to speed recommended), store the downloaded update files on a network directory.

### Further information

- Installing software options  
See User Manual, chapter "Basic Instrument Configurations".
- Connecting the instrument to a network (LAN)  
See the User Manual, chapter "Operating the R&S SFC in a LAN".
- Sharing and accessing instrument drives  
See the User Manual, chapter "Operating the R&S SFC in a LAN".
- R&S SFC only: Making a backup before installing new firmware  
See the User Manual, chapter "Installed Software".

### 3.1 Firmware Update

The firmware update consists of the following files. The version numbers in the file names vary with each update (symbolized by placeholder x).

- Firmware:
  - For R&S SFC: *Sfc\_xx.xx.xx.xx(Release).exe*
  - For R&S SFC-U: *Sfcu\_xx.xx.xx.xx(Release).exe*

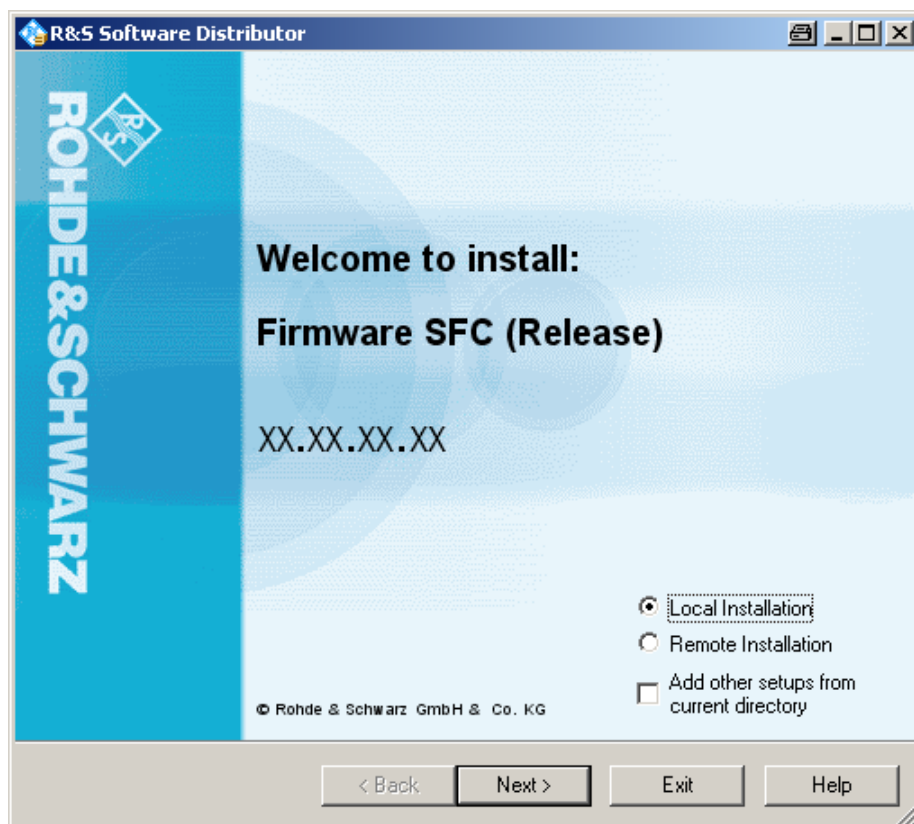
If Analog Realtime Modulations (ATV) are used, the following file is necessary too:

- Video signals: *AtvVideoBasic\_xx.xx.xx.xx.msi*

The update is performed under control of the Windows XP Embedded operating system. Windows XP can only be accessed if a mouse and optional an external keyboard is connected.

### 3.1.1 Updating the Firmware on the R&S SFC

1. Switch off the R&S SFC.
2. Connect monitor, mouse and/or external keyboard to the USB interface.
3. Switch on the R&S SFC.
4. If the monitor switches off automatically during the boot process: Press ALT+CTRL+F4 to switch it on again.
5. Wait until the R&S SFC firmware has booted and the application has started.
6. Access the Windows XP Embedded desktop.
  - Operation with mouse: Click the "Close" button of the R&S SFC application.
  - Operation with keyboard: Press ALT+F4 to close the application.The Windows XP Embedded desktop is displayed.
7. Copy the update files.
  - Using the Windows Explorer, open the folder with the update files.
  - Delete all files in *D:\SFC\Installations*.
  - Copy the update files to *D:\SFC\Installations*.
8. Execute *Sfc\_xx.xx.xx.xx(Release).exe*.  
The R&S Software Distributor is displayed.



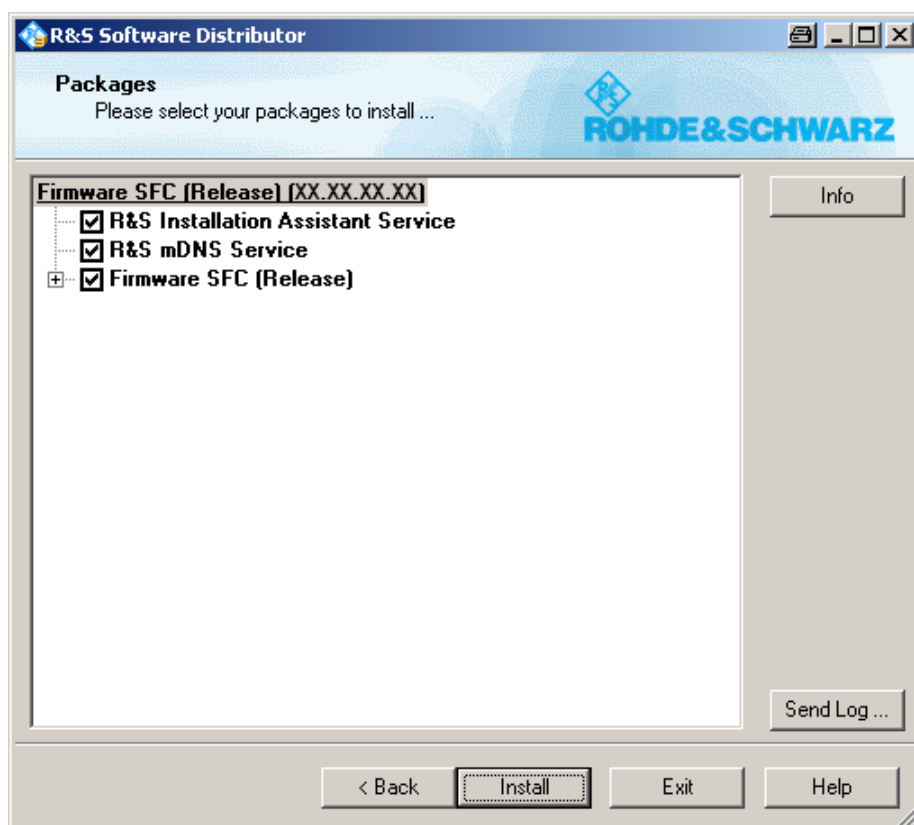
9. Select the installation type:

"Local Installation": If you start your setup file from the R&S SFC hard disk or an external storage medium (USB memory stick, CD-ROM with external drive) connected to the R&S SFC.

"Remote Installation": If your setup files are on an external host computer that is connected to your R&S SFC.

**Note:** A remote installation allows you to update R&S SFCs simultaneously. To use this feature, the previously installed firmware version must be at least V02.60.

10. Click "Next>".



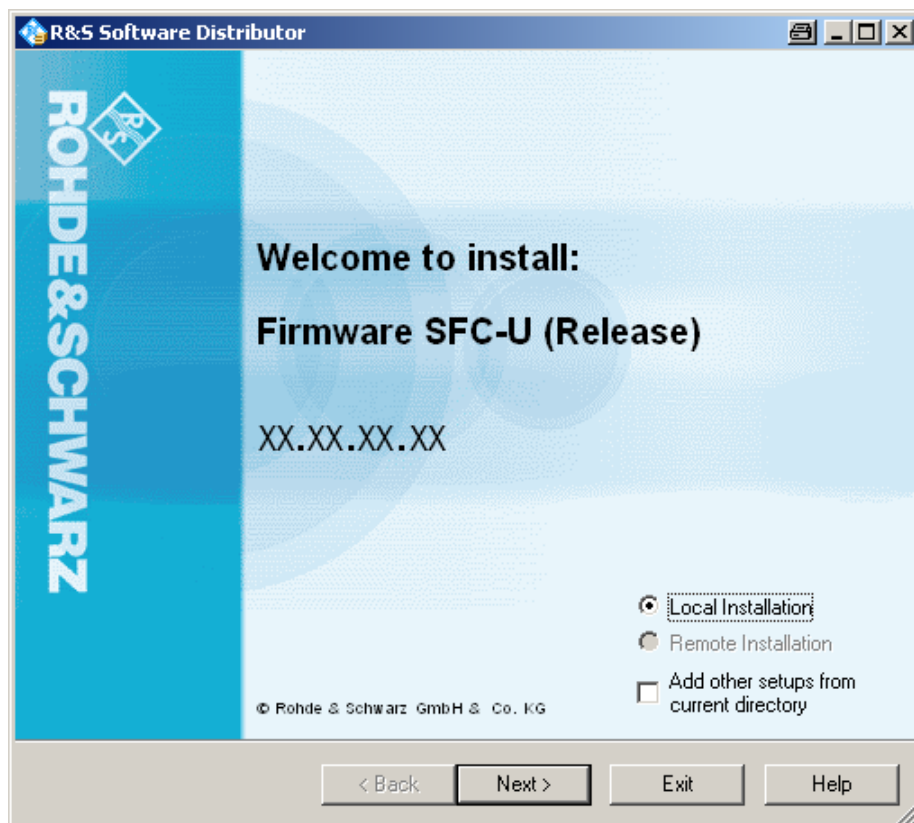
All packages that you need to install are already selected.

11. Click "Install".  
The installation process itself is self-explanatory.
12. After the installation, click the "Exit" button.
13. For Analog Realtime Modulations (ATV) only:  
Execute *AtvVideoBasic\_01.xx.xx.xx.msi* to install the new video signals (if available).

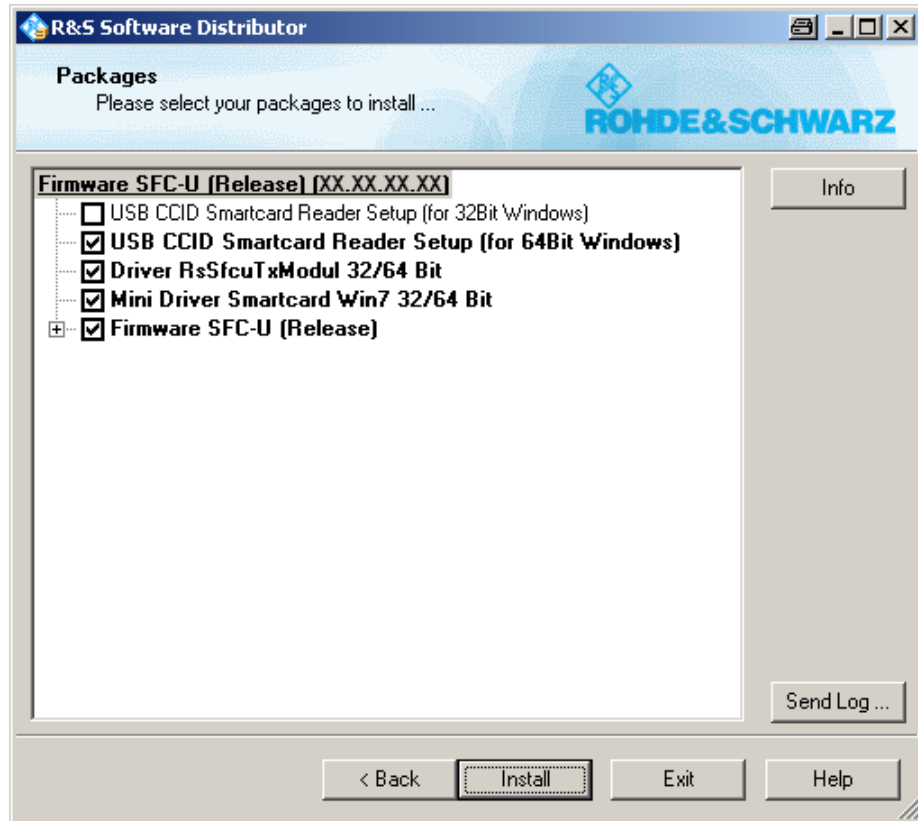


### 3.1.2 Updating the Firmware for the R&S SFC-U

1. Close the R&S SFC-U application.
2. Execute *Sfcu\_xx.xx.xx.xx(Release).exe*.  
The R&S Software Distributor is displayed.



3. Click "Next>".



Depending on the installed operating system, select the packages that you need to install.

Package	Windows 7		Windows XP
	(32 bit)	(64 bit)	(32 bit)
USB CCID Smartcard Reader Setup (for 32Bit Windows)	x		x
USB CCID Smartcard Reader Setup (for 64Bit Windows)		x	
Driver RsSfcuTxModul 32/64 Bit	x	x	x
Mini Driver Smartcard Win7 32/64 Bit	x	x	
Firmware SFC-U (Release)	x	x	x

4. Click "Install".  
The installation process itself is self-explanatory.
5. After the installation, click the "Exit" button.
6. For Analog Realtime Modulations (ATV) only:  
Execute *AtvVideoBasic\_01.xx.xx.xx.msi* to install the new video signals (if available).

## 3.2 Firmware Installation

On the R&S SFC, the firmware is already installed, and you only need to perform updates.

### 3.2.1 Installing the R&S SFC-U Firmware

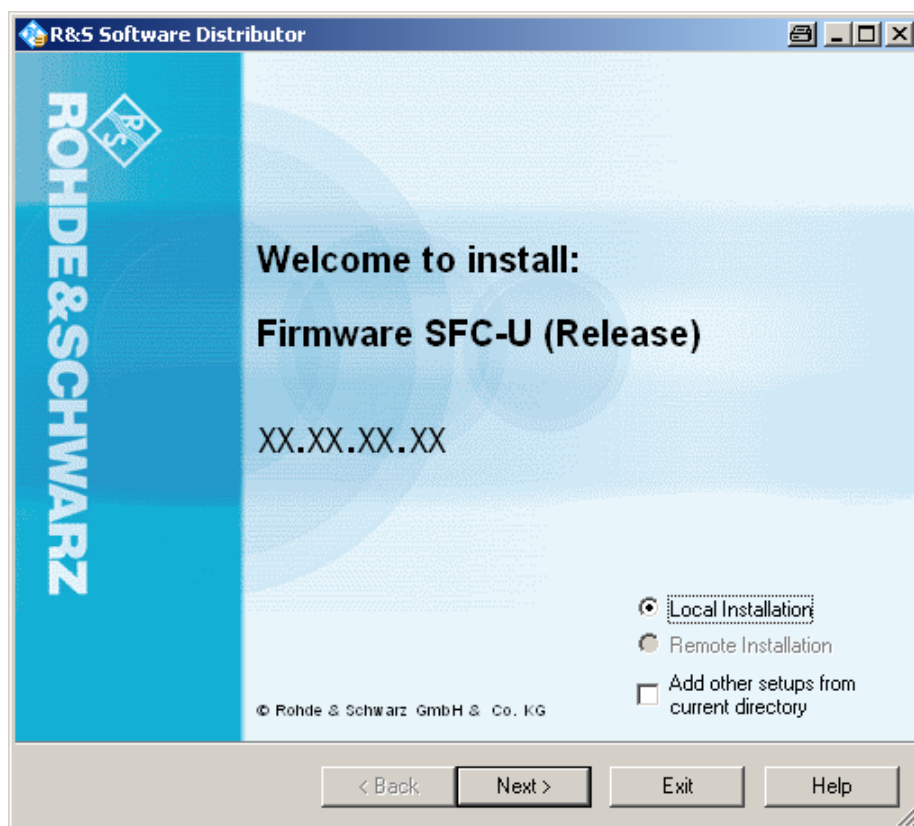
You can install the R&S SFC-U firmware on any computer that meets the following requirements.

#### System requirements

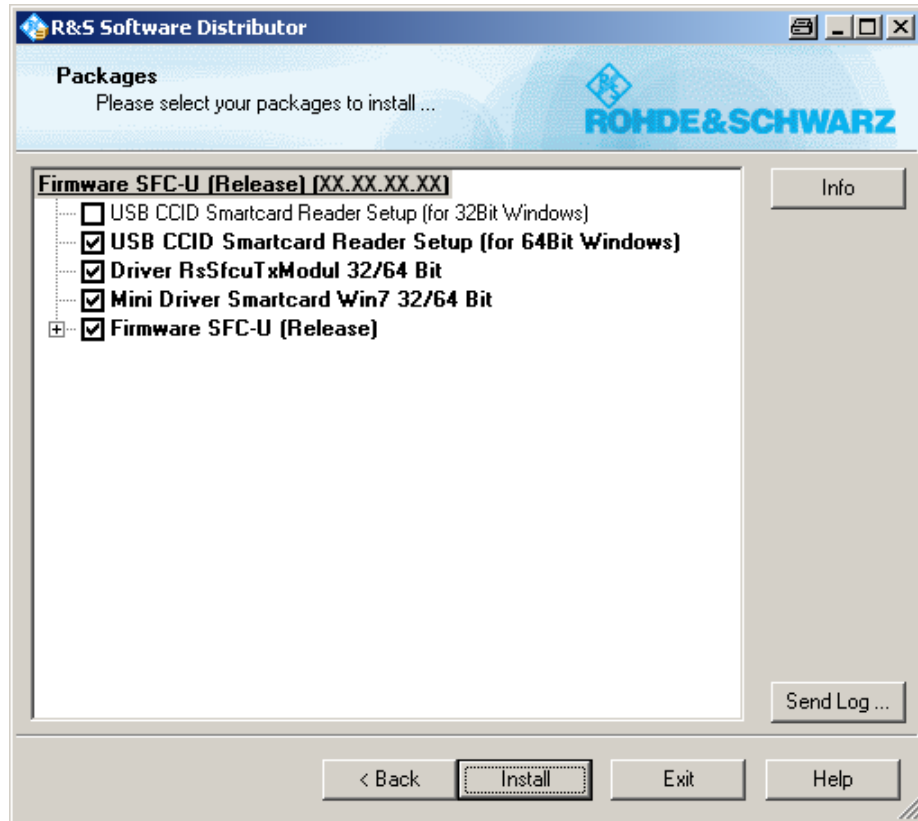
- Windows® XP SP3 / Windows® 7 operating system (32 bit / 64 bit)
- Administrator rights (for installation)
- 130 Mbyte free hard disk space,  
plus a minimum of 500 Mbyte for recording (USB drive can also be used)
- Minimum screen resolution VGA (640 x 480), 256 colors

#### To install the R&S SFC-U firmware

1. Execute *Sfcu\_xx.xx.xx.xx(Release).exe*.  
The R&S Software Distributor is displayed.



2. Click "Next>".



Depending on the installed operating system, select the packages that you need to install.

Package	Windows 7		Windows XP
	(32 bit)	(64 bit)	(32 bit)
USB CCID Smartcard Reader Setup (for 32Bit Windows)	x		x
USB CCID Smartcard Reader Setup (for 64Bit Windows)		x	
Driver RsSfcuTxModul 32/64 Bit	x	x	x
Mini Driver Smartcard Win7 32/64 Bit	x	x	
Firmware SFC-U (Release)	x	x	x

3. Click "Install".  
The installation process itself is self-explanatory.
4. After the installation, click the "Exit" button.
5. For Analog Realtime Modulations (ATV) only:  
Execute *AtvVideoBasic\_01.xx.xx.xx.msi* to install the new video signals (if available).

### 3.2.2 Uninstalling the R&S SFC-U Firmware

To uninstall the R&S SFC-U software, perform the following procedure:

1. In the "Start" menu, select "Control Panel" > "Software" > "Add or Remove Programs".
2. Select "SFC".
3. Click "Remove".
4. Select "R&S USB driver for SFC-U".
5. Click "Remove".
6. Select "USB CCID Smartcard Reader - Version x.x.x.x".
7. Click "Remove".

## 3.3 Firmware Interaction

The firmware installation adds the installation directory "...Rohde&Schwarz\..." to the PATH variable. The string is enclosed by quotation marks to fulfill the requirement of the operating system.

In some rare cases other programs could have problems with quotation marks in the PATH variable.

Older versions of R&S WinIQSIM™ installed on the same computer as the R&S SFC-U firmware will cause an incorrect function of SFC-U application.

## 4 Open Source Acknowledgement

This instrument firmware makes use of valuable open source software packages. The most important of them are listed below together with their corresponding open source license. The verbatim license texts are provided in the following chapters.

Package	Link	License
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zlib	<a href="http://www.zlib.net">http://www.zlib.net</a>	zlib, v.1.2.3
Xalan Xerces	<a href="http://xalan.apache.org/">http://xalan.apache.org/</a> <a href="http://xerces.apache.org/">http://xerces.apache.org/</a>	Apache Software License, Version 2.0
ONC/RPC	<a href="http://www.plt.rwth-aachen.de">http://www.plt.rwth-aachen.de</a>	SUN
VNC	<a href="http://www.realvnc.com/">http://www.realvnc.com/</a>	GPL V3

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com) and software written by Tim Hudson (tjh@cryptsoft.com).

Rohde & Schwarz would like to thank the open source community for their valuable contribution to embedded computing. The source code of the open source packages is available on request.

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```

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.3, July 18th, 2005
Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

```

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