

# R&S®ETL

## TV Analyzer

### Release Notes

### Firmware Version 2.60

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81671 Munich, Germany

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The following abbreviations are used throughout this document:

R&S®ETL is abbreviated as R&S ETL.



**ROHDE & SCHWARZ**

Broadcasting

Release Notes

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# 1 Information on the Current Version and History

## 1.1 Version 02.60

### Firmware package contents

Component	FW version
ETL instrument firmware	2.60
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.050
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.200
DVB-T2 FPGA ext.	2.200
ETL TxCheck	2.10

### New Functionality

- ETL TxCheck:
  - New: Support of DVB-T2 (since FW 2.52).
  - TxCheck manual added (press HELP)
- DVB-T2 Firmware (R&S ETL-K340):
  - Support of L1 post scrambling
  - Support of DVB-T2-signals containing FEF (future extension frame)

### Fixed Issues

- DVB-T2 Firmware (R&S ETL-K340):
  - PLP synchronization can now be acquired on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).

- Multi-PLP: No cyclic PLP-Unsync anymore if data PLP and common PLP use different time interleaving types (e.g. VV404).
- Improvement of reception for signals with long distance echoes within guard interval for system optimization “Fast/SFN” and “Mobile”.  
Note: The MER value is limited to approximately 34dB in T2-modes with  $\tau_G \cdot D_x > 0,75$  ( $\tau_G$ : relative duration of guard interval,  $D_x$ : Difference in carrier index between adjacent scattered-pilot-bearing carriers).  
This relation is true for the following combination of parameters:
  - Guard interval = 19/256 with Pilot Pattern = PP4 or PP5
  - Guard interval = 19/128 with Pilot Pattern = PP2 or PP3
- Improved integration of ETL TvScan

#### Known Issues

- No support of WiMax software option.
- SpectrumAnalyzer:
  - In rare cases, the sweep stops when switching e.g. from UKW/FM to SpectrumAnalyzer via remote.
- DVB-T2 Firmware (R&S ETL-K340):
  - Short PLP-Unsync after approximately 10 hours in OFCOM\_4 mode.

## 1.2 Version 02.53

#### Firmware package contents

Component	FW version
ETL instrument firmware	2.53
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.050
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.100
DVB-T2 FPGA ext.	2.100

Component	FW version
ETL TxCheck	2.10

### New Functionality

- MPEG TS Generator/Recorder (R&S ETL-K280):
  - Support of transport stream libraries
    - LIB-K70 Basic Stream Library
    - LIB-K71 Extended SDTV Library
    - LIB-K72 Extended HDTV Library
    - LIB-K73 3D-TV Library

### Fixed Issues

- Support of Save/Recall with previous firmware versions
- Improved RDS-deviation measurement (R&S ETL-K110)

### Known Issues

- No support of WiMax software option.
- SpectrumAnalyzer:
  - In rare cases, the sweep stops when switching e.g. from UKW/FM to SpectrumAnalyzer via remote.
- DVB-T2 Firmware (R&S ETL-K340):
  - Short PLP-Unsync after approximately 10 hours in OFCOM\_4 mode.
  - No PLP synchronization on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).
  - Reduced MER and BER performance in different modes if long distance echoes are applied whose delay times are within guard interval duration.
  - Multi-PLP: Cyclic PLP-Unsync if data PLP and common PLP use different time interleaving types (e.g. VV404).

## 1.3 Version 02.52

### Firmware package contents

Component	FW version
ETL instrument firmware	2.52
MB-FPGA	5.001
MPEG-FPGA	1.4.14

Component	FW version
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.050
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.100
DVB-T2 FPGA ext.	2.100
ETL TxCheck	2.10

### New Functionality

- DVB-C / J.83/A/B/C Firmware (R&S ETL-K210/K213):
  - “Adjust Attenuation” supports optimization of MER. Available via “Special Settings” dialog.

### Modified Functionality

- Improved switching time when switching to/from CCDF/APD measurement

### Fixed Issues

- FM (Radio) Audio Analysis / Generator (R&S ETL-K110):
  - S/N measurement: Indication of pass/fail
  - Spectrum mask measurement: No Generator output after preset when using 1L/2R output
- DVB-T2 Firmware (R&S ETL-K340):
  - L1-post Signalling: Indication of Static Padding Flag & Static Flag
  - Automatic positioning of FFT window: Automatic positioning is no longer limited to  $\pm 1/3$  of guard interval duration.

### Known Issues

- No support of WiMax software option.
- SpectrumAnalyzer:
  - In rare cases, the sweep stops when switching e.g. from UKW/FM to SpectrumAnalyzer via remote.
- DVB-T2 Firmware (R&S ETL-K340):

- Short PLP-Unsync after approximately 10 hours in OFCOM\_4 mode.
- No PLP synchronization on PLP with time interleaving disabled and containing more than 2<sup>20</sup> cells per T2 frame (e.g. VV034-DTG016).
- Reduced MER and BER performance in different modes if long distance echoes are applied whose delay times are within guard interval duration.
- Multi-PLP: Cyclic PLP-Unsync if data PLP and common PLP use different time interleaving types (e.g. VV404).

## 1.4 Version 02.51

### Firmware package contents

Component	FW version
ETL instrument firmware	2.51
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.050
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.100
DVB-T2 FPGA ext.	2.100
ETL TxCheck	2.02

### Modified Functionality

- FM (Radio) Audio Analysis / Generator (R&S ETL-K111):
  - Support of R&S ETL-B110 with R&S ETL-B203Var03

## 1.5 Version 02.50

### Firmware package contents

Component	FW version
ETL instrument firmware	2.50
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.050
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.100
DVB-T2 FPGA ext.	2.100
ETL TxCheck	2.02

### New Functionality

- DVB-T2 Firmware (R&S ETL-K340):
  - Support of MISO signals including extension in Echo Pattern measurement to distinguish among paths transmitted from MISO group 1 and group 2.
- DVB-T2 SFN Frequency Offset (R&S ETL-K341): Initial release.
- ATSC/ATSC Mobile DTV Firmware (R&S ETL-K220/K320/K322):
  - Indication of pass/fail.
- Base unit: New command to end remote desktop session without the need to login again locally.

### Modified Functionality

- DVB-T2 Firmware (R&S ETL-K340):
  - LDPC Iterations: The number of digits after the decimal separator has been increased to two. In MeasurementLog (Avg), the number of digits after the decimal separator has been increased to four.
- ATSC/ATSC Mobile DTV Firmware (R&S ETL-K220/K320/K322):
  - Selected zoom value is kept now after switching between Legacy and M/H screen.



- DVB-T2 MI Analysis (R&S ETL-K382):
  - For T2-MI Monitoring a total number of 4 PLPs can now be monitored in parallel
  - The following T2-MI monitoring parameters are now available: PLP NUM Blocks, Transmission Order, Timestamp, Frame Length, Consistency

#### Fixed Issues

- T-DMB/DAB Firmware (R&S ETL-K250):
  - ETI output signal: FCT (Frame Count) and FP (Frame Phase) is corrected.
- ISDB-T Firmware (R&S ETL-K260):
  - Spectrum Emission Mask measurement: Noise floor correction.
- DVB-T2 Firmware (R&S ETL-K340):
  - Support of T2 frames > 255 OFDM data symbols:
    - At 1k > 241 OFDM data symbols,
    - At 2k > 249 OFDM data symbols,
    - At 4k > 253 OFDM data symbols,
    - At 8k, 16k, 32k > 255 OFDM data symbols are also supported now.
  - MPEG TS output: PCR jitter when applying a Multi-PLP signal.
  - Cyclic loss of PLP synchronization in following mode:  
32K extended, guard interval = 1/16, PP2, PLP Constellation = 256QAM.
  - Automatic positioning of FFT window:  
In 8K or 16K FFT modes together with guard interval duration 1/4, correct positioning was limited to post echo delays up to 1/2 of guard interval duration.

#### Known Issues

- No support of WiMax software option.
- SpectrumAnalyzer:
  - In rare cases, the sweep stops when switching e.g. from UKW/FM to SpectrumAnalyzer via remote.
- Data Broadcast Analysis (R&S ETL-K284):
  - DVB-H Time Slice Analyzer not supported.
- DVB-T2 Firmware (R&S ETL-K340):
  - No PLP synchronization on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).
  - Automatic positioning of FFT window:  
Automatic positioning is limited to  $\pm 1/3$  of guard interval duration.
  - Multi-PLP: Cyclic PLP-Unsync if data PLP and common PLP use different time interleaving types (e.g. VV404).

## 1.6 Version 02.40

### Firmware package contents

Component	FW version
ETL instrument firmware	2.40
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.532
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.040
ISDB-T FPGA	2.010
UKW/FM FPGA	1.232
DVB-T2 FPGA	2.000
DVB-T2 FPGA ext.	2.000
ETL TxCheck	2.01

### New Functionality

- DVB-T2 Firmware (R&S ETL-K340):
  - Support of Multi-PLP signals.
  - Improvement of demodulation performance under critical conditions (eg mobile, echoes).
- ATSC/ATSC Mobile DTV Firmware (R&S ETL-K220/K320/K322):
  - Signal/Noise Ratio measurement.
- DVB-T2 MI Analysis (R&S ETL-K382):
  - Initial release.

### Modified Functionality

#### Fixed Issues

- ATSC/ATSC Mobile DTV Firmware (R&S ETL-K220/K320/K322):
  - Average of Group Delay measurement.
- T-DMB/DAB Firmware (R&S ETL-K250):
  - Mode 3: Display of Main ID is corrected.

- ISDB-T Firmware (R&S ETL-K260):
  - Stability of Out of Band Emissions measurement.
- DVB-T2 Firmware (R&S ETL-K340):
  - Signals with Time Interleaving Type = 1 can now be decoded (e.g. VV006).
  - For 256QAM with code rate 3/5 or 1/2 (e.g. OFCOM\_4 or OFCOM\_5), minimum BER is zero now.
- FM (Radio) Audio Analysis / Generator (R&S ETL-K111):
  - Several fixes. Missing remote commands added.
- Spectrum Analyzer:
  - C/N measurement.
- All standards:
  - Editing of channel tables, selection of channel number in RF menu.

#### Known Issues

- No support of WiMax software option.
- MPEG TS Analysis/Monitoring (R&S ETL-K282):
  - Export of templates with SNMP not supported.
  - Hiding of events with SNMP not supported.
- Data Broadcast Analysis (R&S ETL-K284):
  - DVB-H Time Slice Analyzer not supported.
- DVB T2-MI Analysis (R&S ETL-K382):
  - Remote control not supported.
- DVB-T2 Firmware (R&S ETL-K340):
  - Support of T2 frames > 255 OFDM data symbols:
    - At 1k > 241 OFDM data symbols a problem occurs.
    - At 2k > 249 OFDM data symbols a problem occurs.
    - At 4k > 253 OFDM data symbols a problem occurs.
    - At 8k, 16k, 32k > 255 OFDM data symbols a problem occurs.
  - No PLP synchronization on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).
  - Automatic positioning of FFT window:
    - a) Automatic positioning is limited to  $\pm 1/3$  of guard interval duration.
    - b) In 8K or 16K FFT modes together with guard interval duration 1/4, correct positioning is limited to post echo delays up to 1/2 of guard interval duration.
  - MPEG TS output: When applying a Multi-PLP signal the PCR jitter may increase cyclically beyond 500ns.
  - Cyclic loss of PLP synchronization in following mode:  
32K extended, guard interval = 1/16, PP2, PLP Constellation = 256QAM.

## 1.7 Version 02.32

### Firmware package contents

Component	FW version
ETL instrument firmware	2.32
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.500
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.040
ISDB-T FPGA	2.010
UKW/FM FPGA	1.100
DVB-T2 FPGA	1.300
DVB-T2 FPGA ext.	1.300
ETL TxCheck	2.01

### New Functionality

- DVB-T2 Firmware (R&S ETL-K340):
  - BBFRAME Error Ratio and Errored Second Ratio measurement.
  - Special Function -> System Optimization

### Modified Functionality

#### Fixed Issues

- FM (Radio) Audio Analysis / Generator (R&S ETL-K111):
  - S/N Measurement: Wrong results when using the MPX Input together with AmplDefinition PeakVoltage or Level.
- DVB-T2 Firmware (R&S ETL-K340):
  - MPEG TS output: The PCR jitter is rather high. Some MPEG decoders may fail due to this PCR jitter. But it is possible to record the TS and then correctly playback or analyze it.
  - MPEG TS Analysis/Monitoring (R&S ETL-K282): "TS Sync loss" when using "TS ASI Internal" input.  
Workaround: Connect ASI OUT and TS ASI IN and use "TS ASI External" input for analysis.

**Known Issues**

- No support of WiMax software option.
- MPEG TS Analysis/Monitoring (R&S ETL-K282):
  - Export of templates with SNMP not supported.
  - Hiding of events with SNMP not supported.
- DVB-T2 Firmware (R&S ETL-K340):
  - Support of T2 frames > 255 OFDM data symbols:
    - At 1k > 241 OFDM data symbols a problem occurs.
    - At 2k > 249 OFDM data symbols a problem occurs.
    - At 4k > 253 OFDM data symbols a problem occurs.
    - At 8k, 16k, 32k > 255 OFDM data symbols a problem occurs.
  - No PLP synchronization on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).
  - Automatic positioning of FFT window:
    - a) Automatic positioning is limited to  $\pm 1/3$  of guard interval duration.
    - b) In 8K or 16K FFT modes together with guard interval duration  $1/4$ , correct positioning is limited to post echo delays up to  $1/2$  of guard interval duration.
  - For 256QAM with code rate  $3/5$  or  $1/2$  (e.g. OFCOM\_4 or OFCOM\_5), minimum BER is not zero: BER before LDPC <  $1.0e-8$ , BER before BCH <  $1.0e-9$ .
  - Signals with Time Interleaving Type = 1 cannot be decoded (e.g. VV006)

**1.8 Version 02.31****Firmware package contents**

Component	FW version
ETL instrument firmware	2.31
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.500
ATSC-M/H FPGA ext.	1.020
TDMB FPGA	1.040
ISDB-T FPGA	2.010
UKW/FM FPGA	1.100

Component	FW version
DVB-T2 FPGA	1.200
DVB-T2 FPGA ext.	1.200
ETL TxCheck	2.01

### New Functionality

- Support of R&S ETL-B310 hardware option.
- Analog TV Generator Firmware (R&S ETL-K203):
  - New video generator files: “sinx/x”, “grey 50%”, “50Hz” resp. “60Hz”.

### Modified Functionality

#### Fixed Issues

- Spurs in Spectrum Analyzer mode at several frequencies.

#### Known Issues

- No support of WiMax software option.
- MPEG TS Analysis/Monitoring (R&S ETL-K282):
  - Export of templates with SNMP not supported.
  - Hiding of events with SNMP not supported.
- DVB-T2 Firmware (R&S ETL-K340):
  - MPEG TS output: The PCR jitter is rather high. Some MPEG decoders may fail due to this PCR jitter. But it is possible to record the TS and then correctly playback or analyze it.
  - MPEG TS Analysis/Monitoring (R&S ETL-K282): "TS Sync loss" when using "TS ASI Internal" input.  
Workaround: Connect ASI OUT and TS ASI IN and use "TS ASI External" input for analysis.
  - Support of T2 frames > 255 OFDM data symbols:
    - At 1k > 241 OFDM data symbols a problem occurs.
    - At 2k > 249 OFDM data symbols a problem occurs.
    - At 4k > 253 OFDM data symbols a problem occurs.
    - At 8k, 16k, 32k > 255 OFDM data symbols a problem occurs.
  - No PLP synchronization on PLP with time interleaving disabled and containing more than  $2^{20}$  cells per T2 frame (e.g. VV034-DTG016).
  - Automatic positioning of FFT window:
    - a) Automatic positioning is limited to  $\pm 1/3$  of guard interval duration.
    - b) In 8K or 16K FFT modes together with guard interval duration 1/4, correct positioning is limited to post echo delays up to 1/2 of guard interval duration.

- For 256QAM with code rate 3/5 or 1/2 (e.g. OFCOM\_4 or OFCOM\_5), minimum BER is not zero: BER before LDPC < 1.0e-8, BER before BCH < 1.0e-9.

## 1.9 Version 02.30

### Firmware package contents

Component	FW version
ETL instrument firmware	2.30
MB-FPGA	5.001
MPEG-FPGA	1.4.14
ATV FPGA	1.270
DTMB FPGA	1.560
DVB-T/H FPGA	2.440
J83A/B/C FPGA	1.600
ATSC FPGA	1.420
ATSC-M/H FPGA ext.	1.000
TDMB FPGA	1.040
ISDB-T FPGA	2.010
UKW/FM FPGA	1.100
DVB-T2 FPGA	1.200
DVB-T2 FPGA ext.	1.200
ETL TxCheck	1.43

### New Functionality

- ATSC Mobile DTV Firmware (R&S ETL-K320/K322 in combination with R&S ETL-B300).
- ATSC Mobile DTV Channel Analysis: Single Frequency Network Measurement Option (R&S ETL-K321).
- Remote: Readout of overall status (pass/fail).

### Modified Functionality

- ATSC Firmware (R&S ETL-K220):
  - Changed Echo Pattern configuration menu.
  - BER/PER measurement progress is displayed in percent.
  - Improved MPEG sync detection.

**Fixed Issues**

- Support of French keyboard (reboot after change of keyboard layout necessary).
- Lost focus after exit of extended RDS-Analysis (R&S ETL-K110).
- \*OPC for adjust attenuation is implemented.

**Known Issues**

- ATSC Mobile DTV Firmware (R&S ETL-K320/K322):
  - Support of dynamic TPC/FIC configuration: Short parade unsync occurs, when TPC/FIC configuration changes.



## 2 Modifications to the Documentation

The current documentation is up-to-date.

## 3 Firmware Update

The current firmware version is provided for download at <http://www.rohde-schwarz.com/downloads/firmware/etl.html>

### 3.1 Important Update Information

All firmware versions 01.71 or later are updated using the procedure described in section 3.2.1. Only if the general procedure is not practical, install the firmware by means of Windows XP (see section 3.2.2). Firmware versions 01.70 and older version need a special procedure described in section 3.2.3.

### 3.2 Updating the Firmware

For information on updating software options refer to the Operating Manual, chapter 13.

#### 3.2.1 General Procedure

You can install a new firmware version via USB devices (e.g. a memory stick), GPIB (GPIB Interface, R&S FSL-B10), or LAN. Normally, you install a new version as described here. If an exception occurs and you cannot proceed according to this description, you can install a new firmware version via the Windows XP Start menu as described in section 3.2.2.

1. Press the **SETUP** key.  
The setup menu is displayed.
2. Press the **More ▼** softkey.  
The side menu is displayed.
3. Press the **Firmware Update** softkey.  
The submenu for installing new firmware versions is displayed.
4. Press the **Firmware Update** softkey.  
The **Firmware Update** dialog box with the default update path "D:\FW\_UPDATE" is displayed.
5. If you install from a memory stick or another USB device and the update path is different from the default path, enter the drive name and directory via the keypad.

**Example:** The installation files are stored on a memory stick in the "Update" directory. After you insert the memory stick, it will be detected as drive "D:". Therefore, the required path specification is "D:\UPDATE".

6. If you install via LAN using the Remote Desktop application and the update path is different from the default path, enter the drive name and directory or press the **Browse** button to locate the directory:
  - a. In the displayed dialog box, select the drive.
  - b. On the selected drive, select the folder that contains the installation files (\*.msi).
  - c. Press the **Select** button to confirm your selection and go back to the **Firmware Update** dialog box.
7. Focus the **Execute** button using the **FIELD RIGHT** key and press the **ENTER** key to start the installation program.

The installation program will guide you through the installation.

8. After the firmware update, the UNCAL status display indicates the necessity of a self alignment. Perform a self alignment (for details refer to the First Steps manual, chapter 4).

Remote command: `SYST:FIRM:UPD 'D:\FW_UPDATE'`

If you cannot proceed according to the above described step-by-step instructions, you can install a new firmware version via the Windows XP Start menu:

### 3.2.2 Update via Windows XP

This procedure is only recommended, if the above described procedure is not practical.



For the following step-by-step instructions, a mouse or an external keyboard is required.

---

1. Close all applications.
2. In the Windows XP Start menu, select **Programs**, then **Accessories**, and then **ETL Update Tool**.

The Windows dialog box to open a file is displayed.

3. Select the R&S ETL.package file.
4. Click the **Open** button.

The Install Manager dialog box is displayed. To call help for this dialog box, press **F1** or the **HELP** key on the front panel of the R&S ETL.

If desired, you can activate or deactivate firmware options.

5. Click the **Install** button.

### 3.2.3 Update of Older Firmware Versions

The following special steps describe how to update the R&S ETL firmware versions 01.70 and older version. All firmware versions 01.71 or later are updated using the general procedure described in section 3.2.1.



You need the following equipment for the R&S ETL firmware update:

- Mouse or external keyboard
- USB memory stick or USB hard disk with current firmware

#### 3.2.3.1 Copying the Firmware to USB Memory Stick

The R&S ETL firmware shall be extracted and copied to an USB memory stick. It can be copied to any directory. This directory can be selected during installation of the firmware.

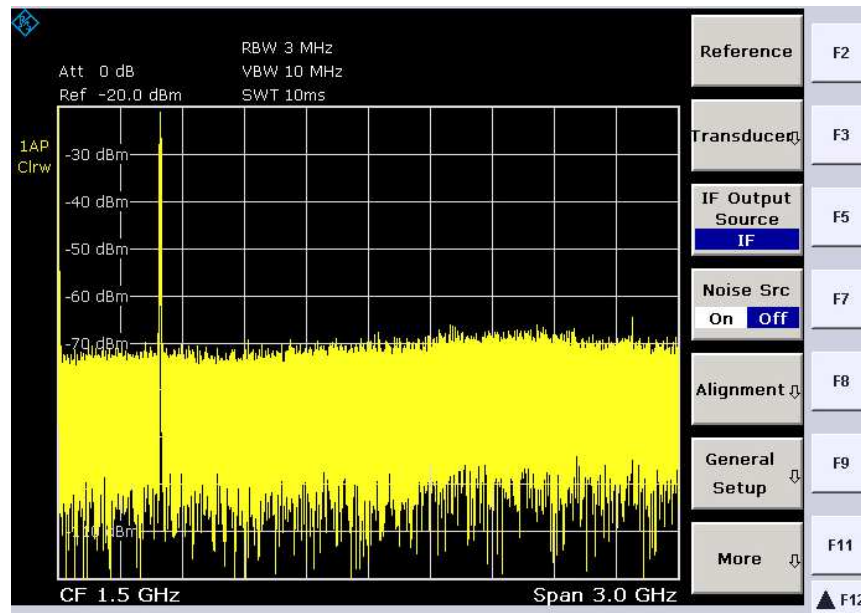
#### 3.2.3.2 Removing the Old Firmware

1. Press the **SETUP** hardkey.

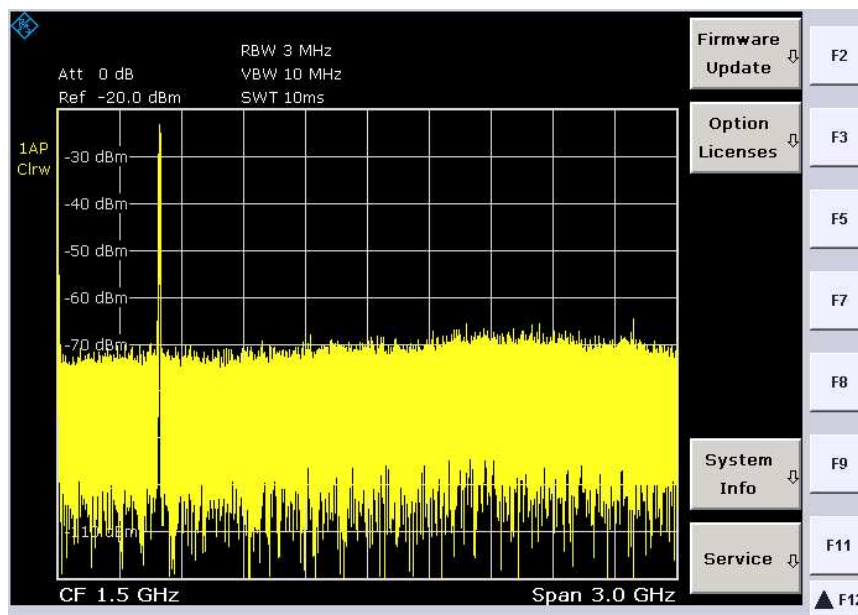
The Setup menu opens.

2. Press the **More** softkey.

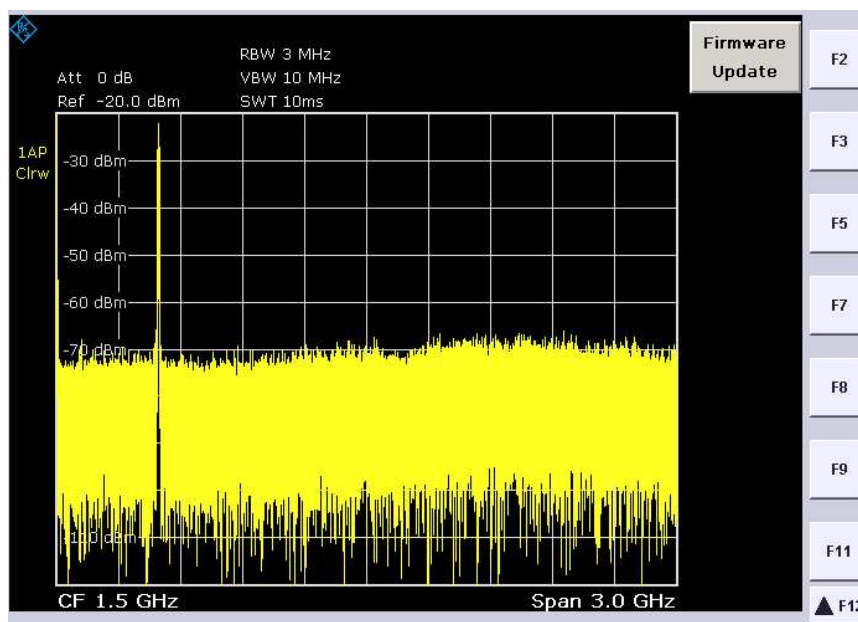
The side menu opens.



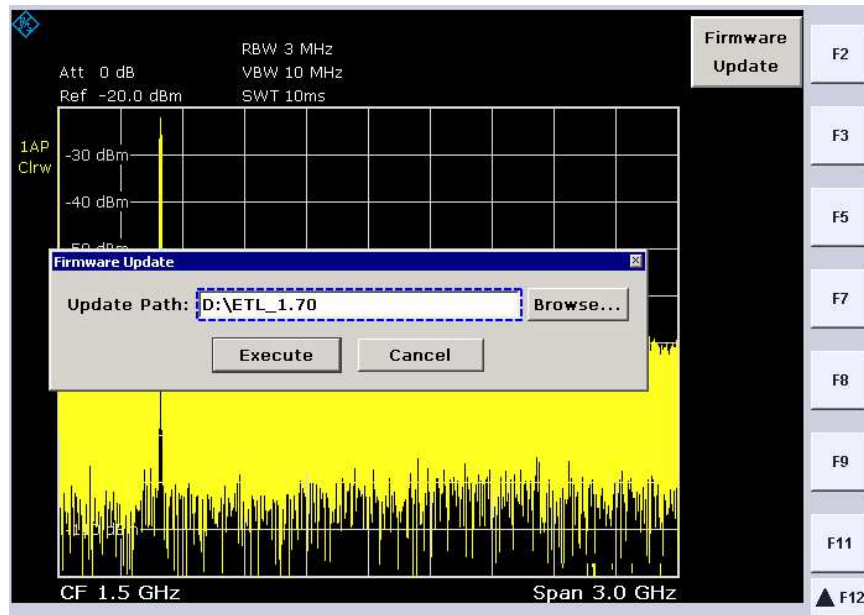
3. Press the **Firmware Update** softkey.



4. Press the **Firmware Update** softkey.

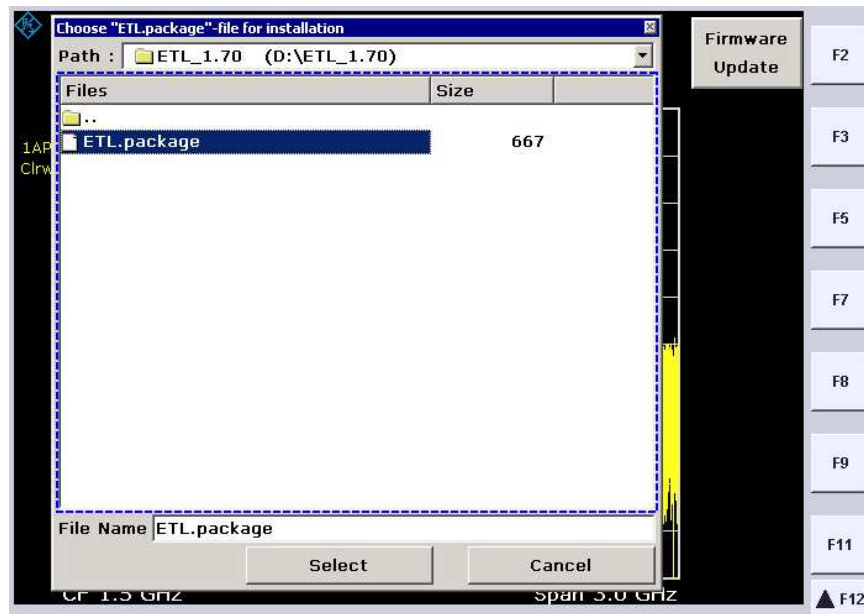


The **Firmware Update** dialog with the preset update path opens.



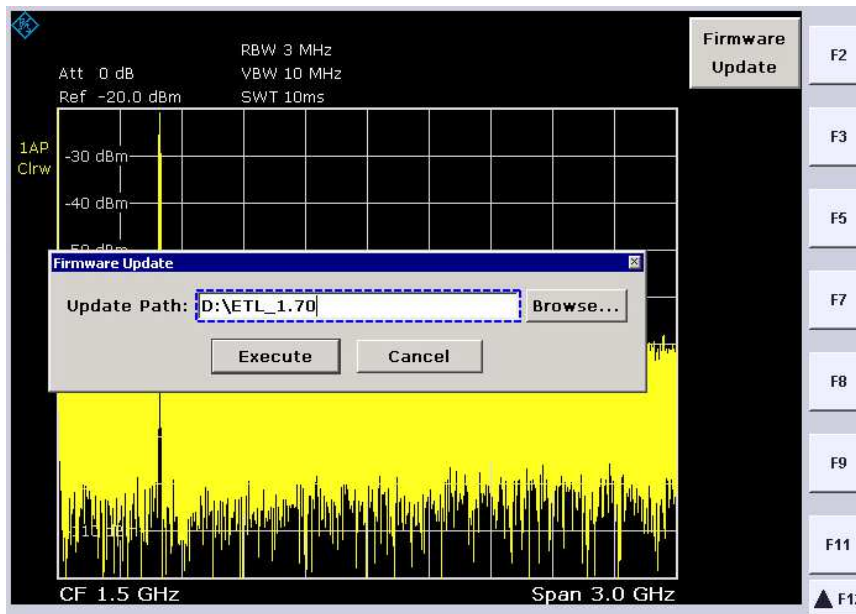
If the firmware is installed from a USB memory stick or a USB hard disk and if the update path differs from the preset path, correct the path settings by means of the **Browse** button. For this purpose, first select the drive using **Path** in the displayed dialog. Under **Files**, select the folder that contains the **ETL.package** installation files.

5. Click **Select** to confirm your selection.

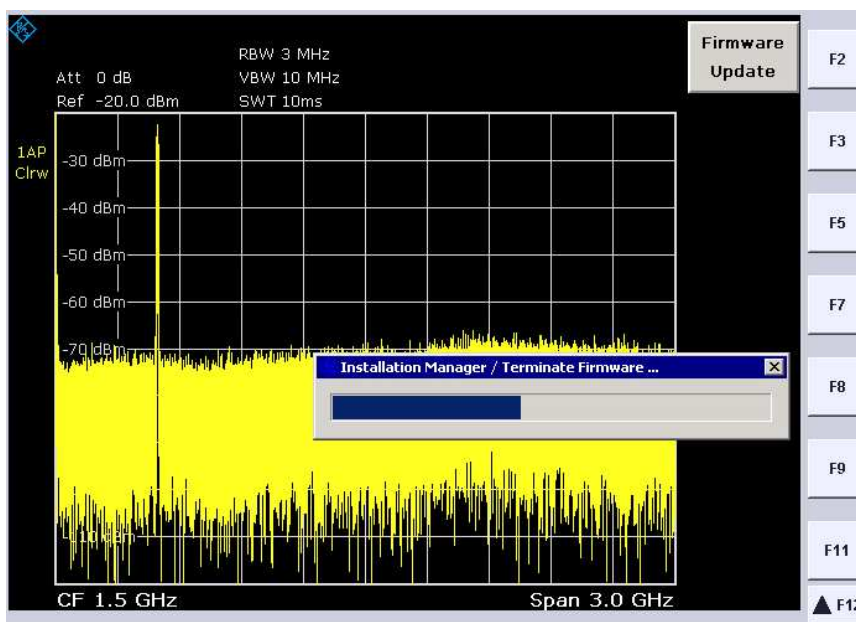


The **Firmware Update** dialog with the set update path opens.

6. Click **Execute** to start the installation program.

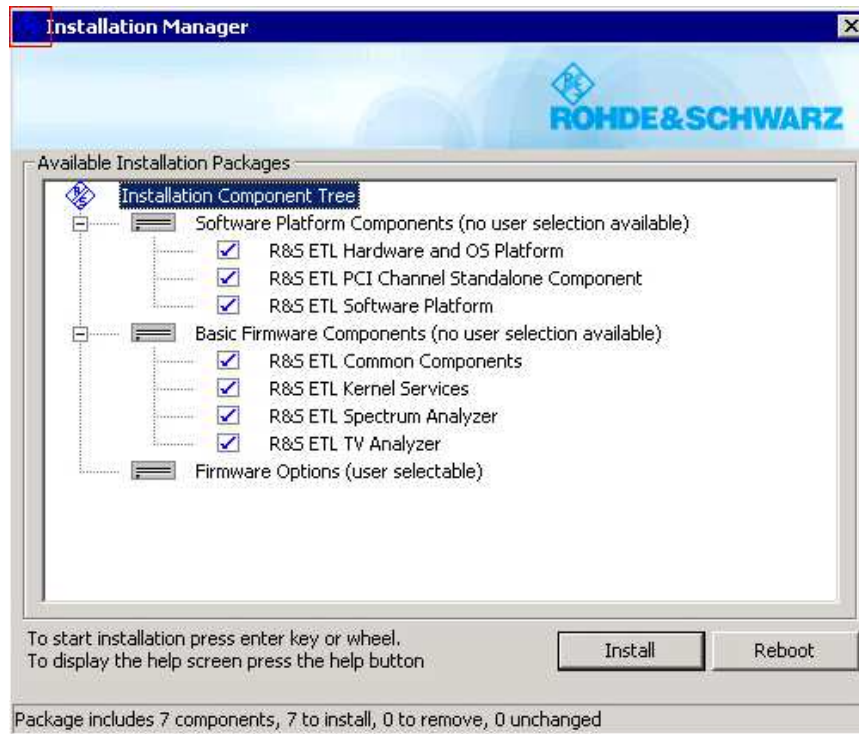


The Installation Manager starts running.

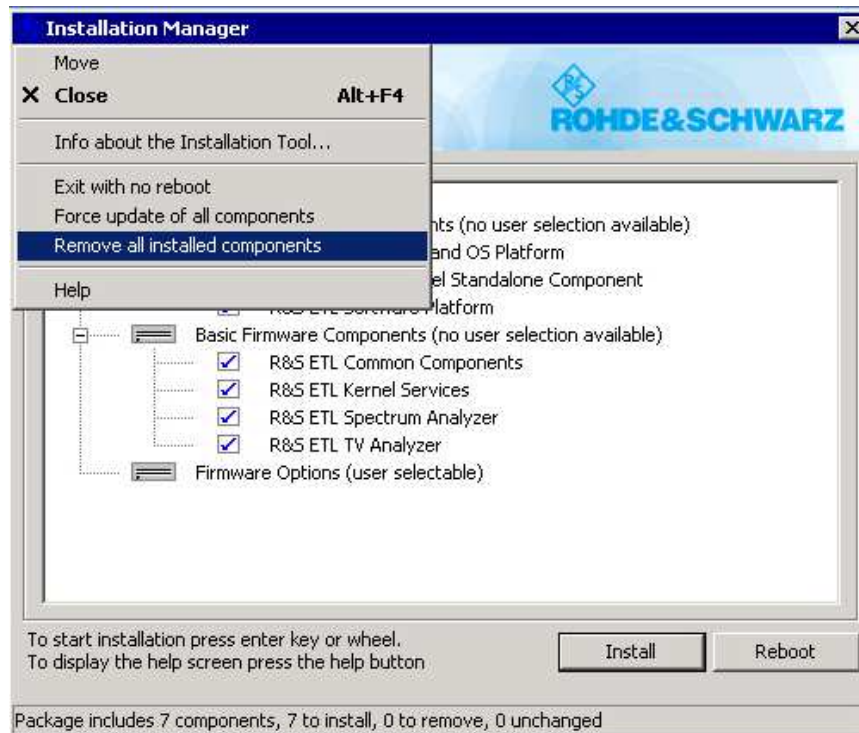


The application is terminated.

7. Open the menu for the **Installation Manager** with a mouse click (blue R&S rhombus, red box) in the left-hand upper corner of the title bar.

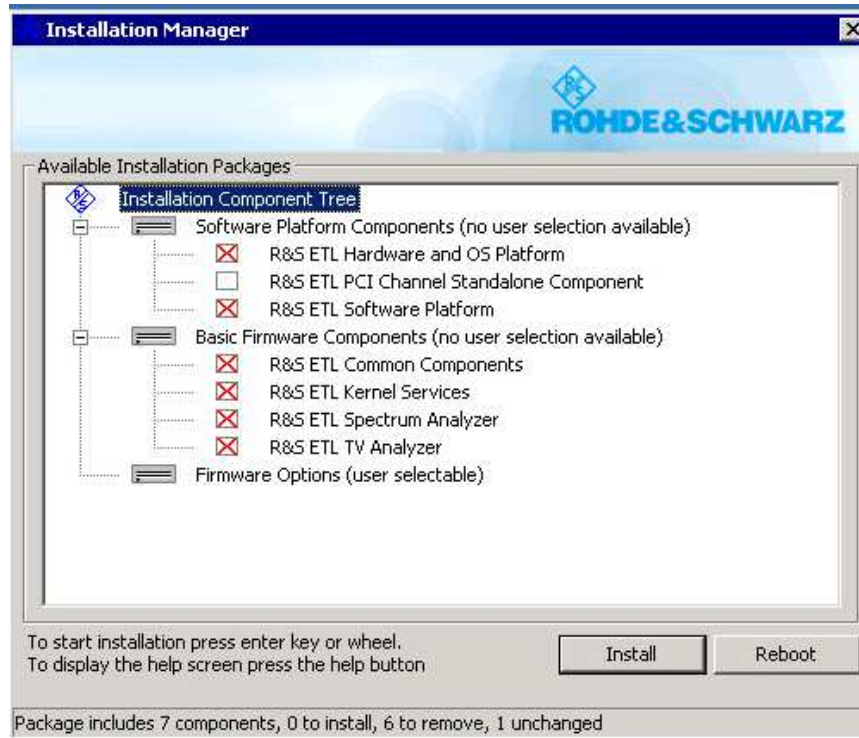


8. Select Remove all installed components.

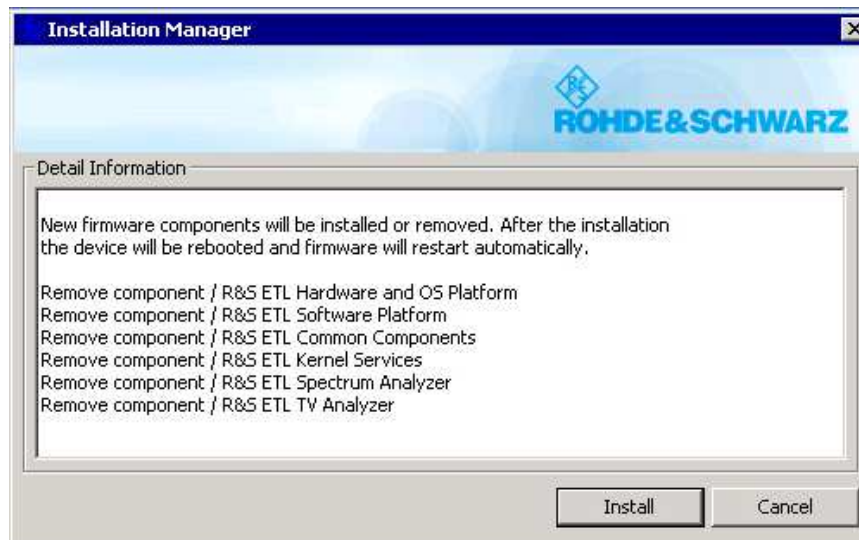




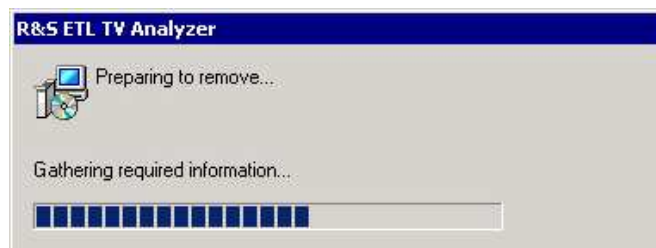
9. Click **Install** to confirm your selection.



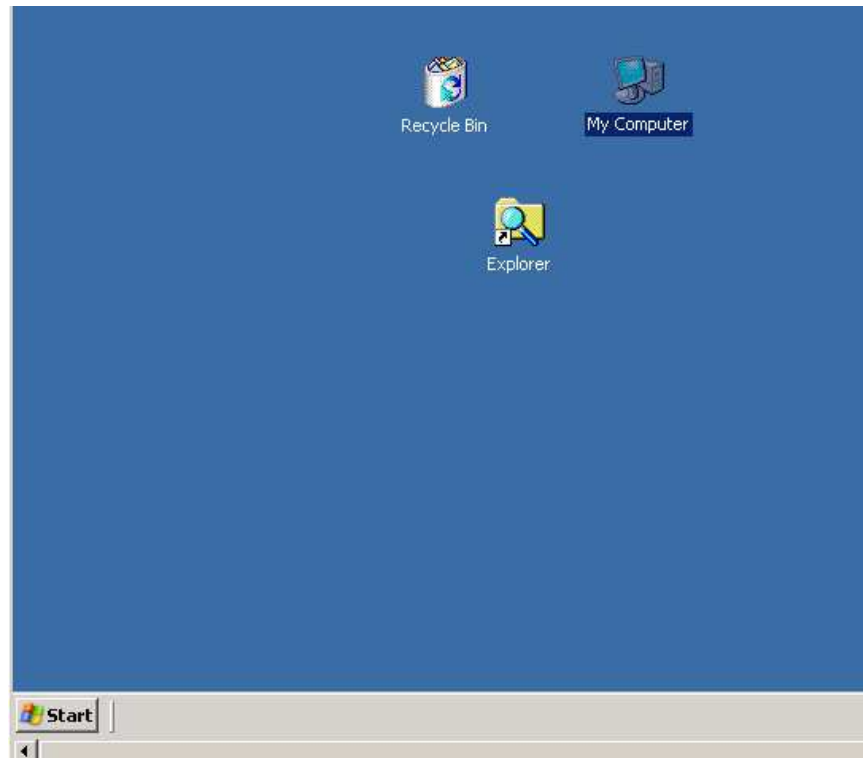
10. Click **Install** to uninstall the components.



11. The components will be removed.

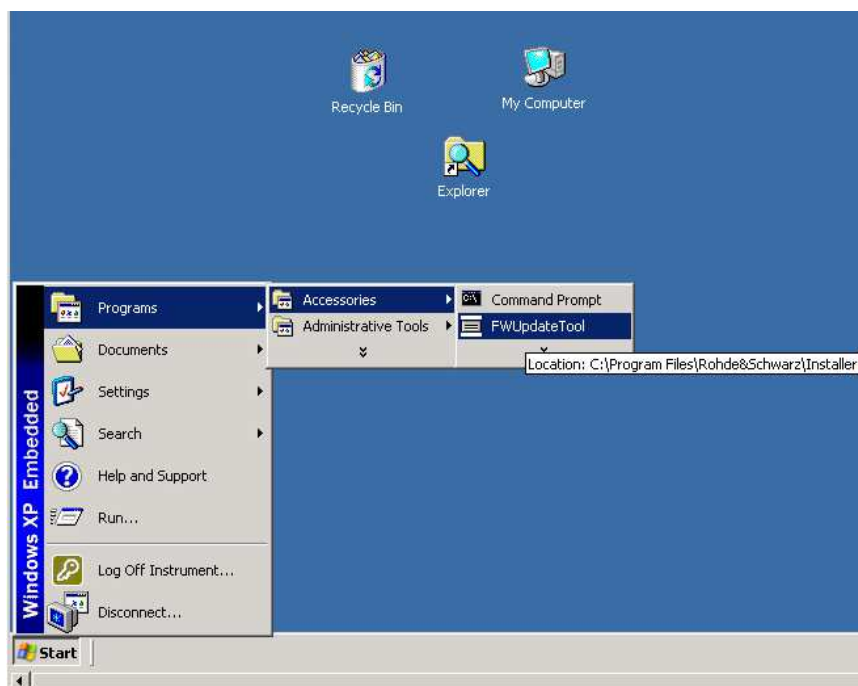


12. The Windows XP start menu will appear after booting.

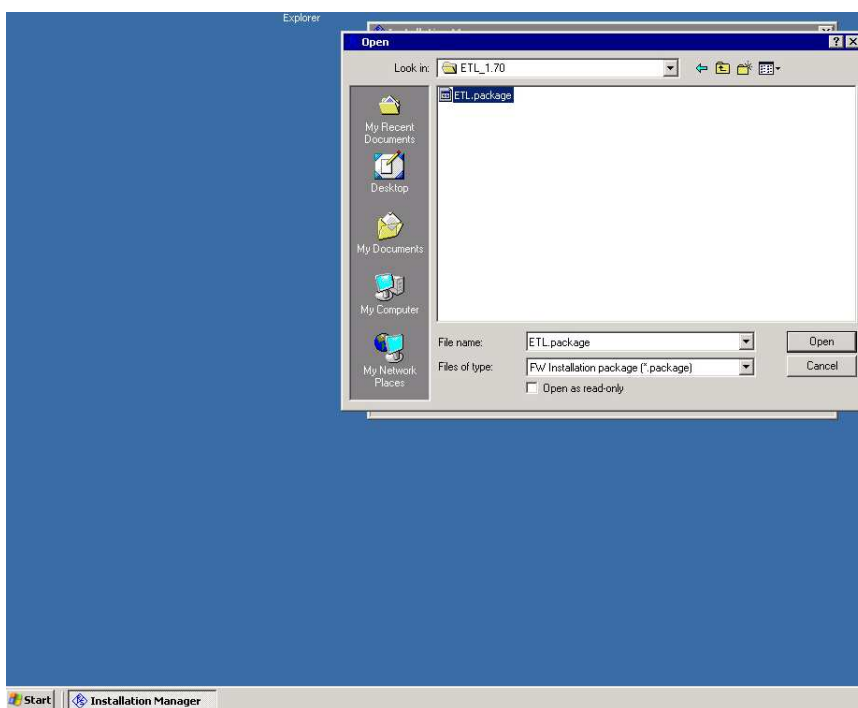


### 3.2.3.3 Installing the New Firmware

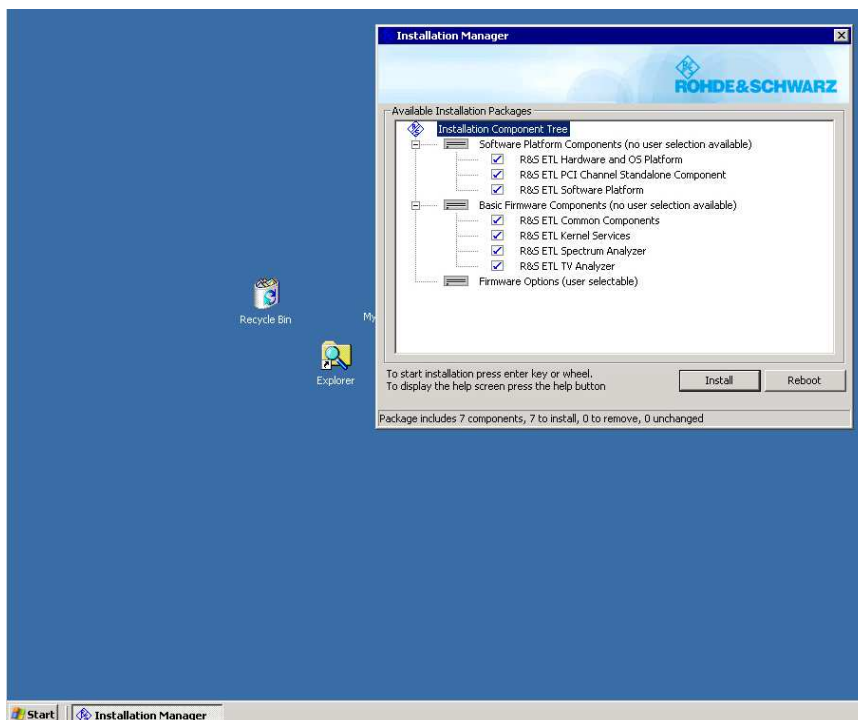
1. Go to the windows task bar and select **Start->Programs->Accessories->FWUpdate Tool** to start the firmware update tool.



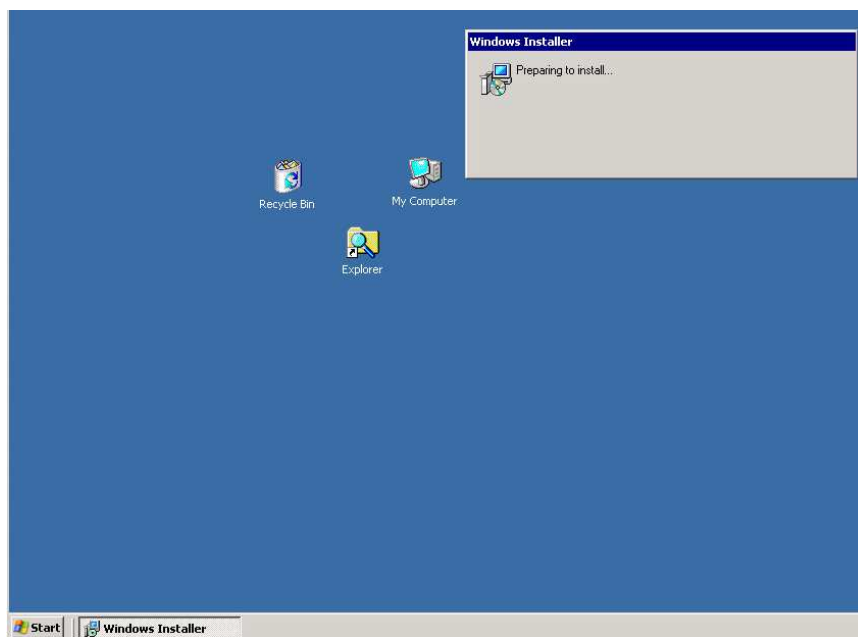
- 2. As described in section 3.2.2, select the **ETL.package** installation file.



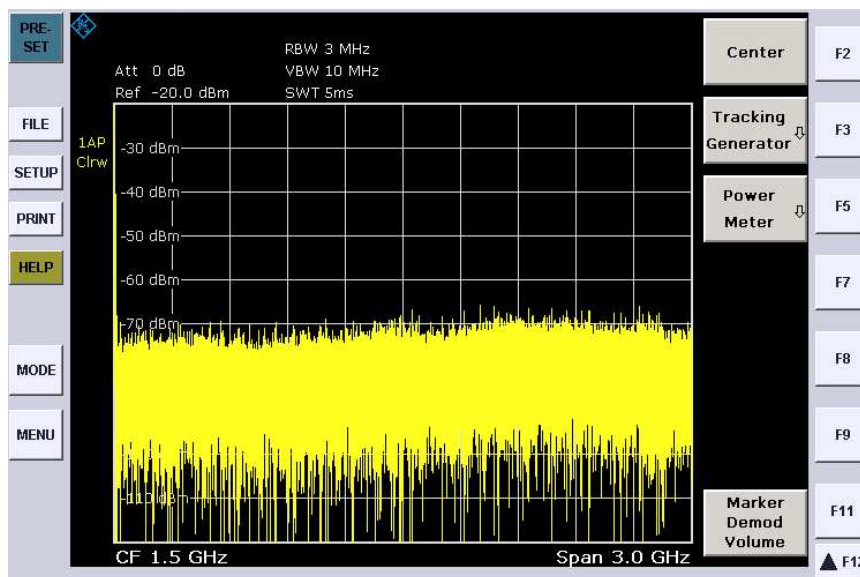
3. Click **Install** to install the selected components.



The software update is running.

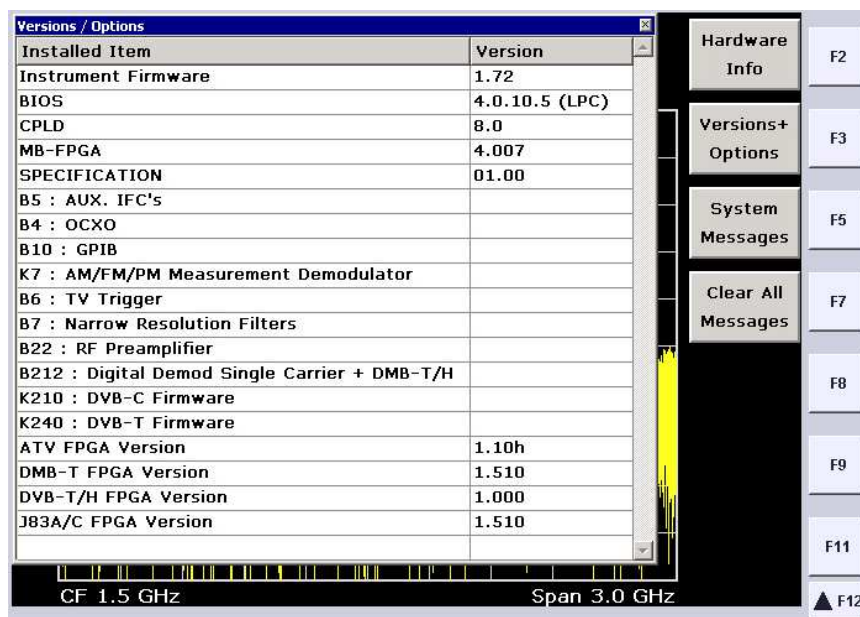


Display after the instrument has booted.



4. Press Setup->More->System Info->Versions + Options.

The new firmware version is indicated.



## 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
VLC	<a href="http://www.videolan.org/">http://www.videolan.org/</a>	GPL V2

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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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```

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version 1.2.3, July 18th, 2005
Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

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