

EMC32 TO R&S®ELEKTRA MIGRATION

Using R&S®ELEKTRA Migration Tool

Products:

- ▶ R&S®ELEKTRA Migration Tool
- ▶ R&S®ELEKTRA
- ▶ R&S®EMC32

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<https://www.rohde-schwarz.com/appnote/1SL396>

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1 Overview

The R&S®ELEKTRA EMC test software is the successor of the R&S®EMC32 EMC measurement software. Like the R&S®EMC32 EMC measurement software, the R&S®ELEKTRA offers a solution that controls complete EMC systems and automates measurements on equipment under test (EUT) that is being tested for emissions (EMI) and immunity (EMS) compliance. It has more features and test types compared to R&S®EMC32.

As both software platforms use different file formats, R&S®EMC32 users who upgrade their existing software to the R&S®ELEKTRA platform need to perform a file conversion before migrating their data to the R&S®ELEKTRA platform. This is done by using the R&S®ELEKTRA Migration Tool, which is installed automatically with each R&S®ELEKTRA installation.

This Application Note describes how to use the R&S®ELEKTRA Migration Tool (version 4.4 onwards) for converting the backup data into the XML format that can be interpreted by the R&S®ELEKTRA software. It also provides recommended conversion steps (Chapter 5) and troubleshooting tips (Chapter 6).

For instructions on migrating the data using R&S®ELEKTRA Migration Tool below version 4.4, refer to the R&S®ELEKTRA user manual. For better user experience, we recommend using the latest software version for migration.

This Application Note does not describe the steps to backup data using the R&S®EMC32 or R&S®ES-SCAN software. For procedures on how to do so, refer to their respective manuals.

2 Preparation

A clean backup copy of the R&S®EMC32 database ensures that you have a smooth migration process. The backup copy is useful especially in the event of file corruption or migration errors, and a clean database reduces migration errors and provides a fresh start in the new system.

We recommend that you back up the database before cleaning or migrating the system. To do so, see R&S®EMC32's user manual.

To prepare for the migration:

1. Delete configurations such as templates, devices or limit lines that are no longer in use.
2. Back up the cleaned database.
3. Update R&S®ELEKTRA to the latest version, if you have not done so.

3 Setting up R&S®ELEKTRA Migration Tool

3.1 Getting Started

To run the R&S®ELEKTRA Migration Tool:

1. Ensure that the R&S®ELEKTRA EMC test software is installed.
For the procedure on how to install the R&S®ELEKTRA, refer to its [user manual](#).
2. Navigate to "Start" > "All programs" > "R&S ELEKTRA" > "ELEKTRA x.xx.xx Migration Tool" to access the migration tool.

You can also access the migration tool via:

```
C:\Program Files\Rohde-Schwarz\ELEKTRA\x.xx.xx\ELEKTRAMigrationTool.exe
```

(xx.xx.xx refers to the R&S®ELEKTRA software version).

Note: You do not need a license dongle to use the migration tool.

3.2 Setting Source Application Type

There are three ways to migrate the data:

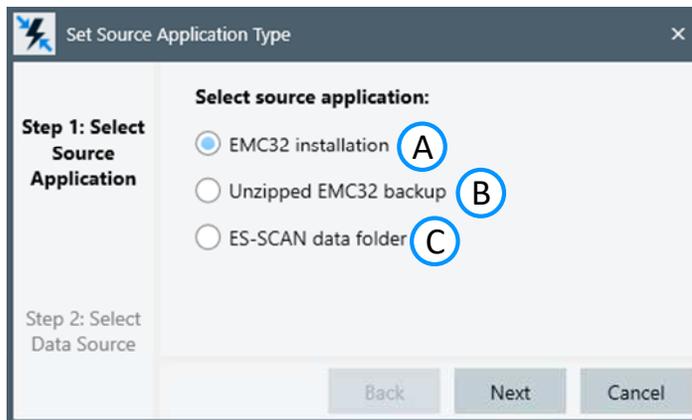


Figure 1: Different source application options

- A = Migrating with R&S EMC32 Installation. See Chapter 2.2.1.
- B = Migrating with Unzipped EMC32 backup files. See Chapter 2.2.2.
- C = Migrating with R&S ES-SCAN data folder. See Chapter 2.2.3

3.2.1 Migrating from R&S®EMC32 Installation

Prerequisite: To ensure successful migration, ensure that there are no errors opening any hardware configuration or device list in the R&S®EMC32.

To migrate data from the software directly:

1. On the migration tool dialog window (Figure 1), select "EMC32 installation".
2. Click "Next".

Select the corresponding EMC32 profile from the dropdown box. Below example shows a selected profile with the filename EMC32_CE.

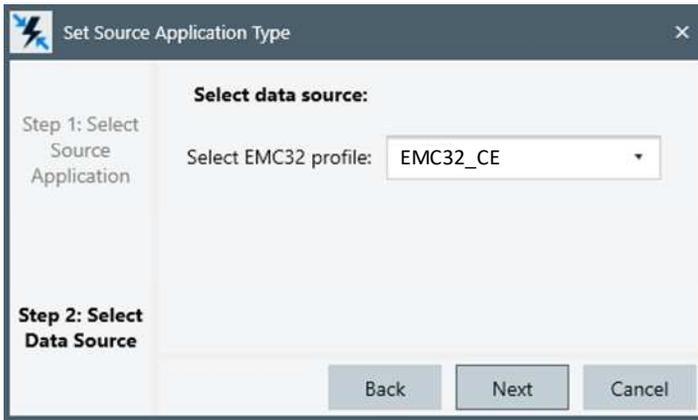


Figure 2: Selected "EMC32_CE" profile

3. Click "Next".
4. To start converting the backup file to XML format, follow the instructions in Chapter 4.

3.2.2 Migrating from Unzipped R&S®EMC32 Backup

To migrate the R&S®EMC32 data from the R&S®EMC32 backup file:

1. Navigate to the folder where the backup files are kept.
2. Unzip the ZIP file.
Note: You will not be able to perform the migration if the files are zipped.
3. Run the R&S®ELEKTRA Migration Tool, if you have not done so.
4. On the migration tool dialog window (Figure 1), select "Unzipped EMC32 backup".
5. Click "Next"
6. Browse for the folder directory of the **unzipped backup folder** by clicking on the top  button:

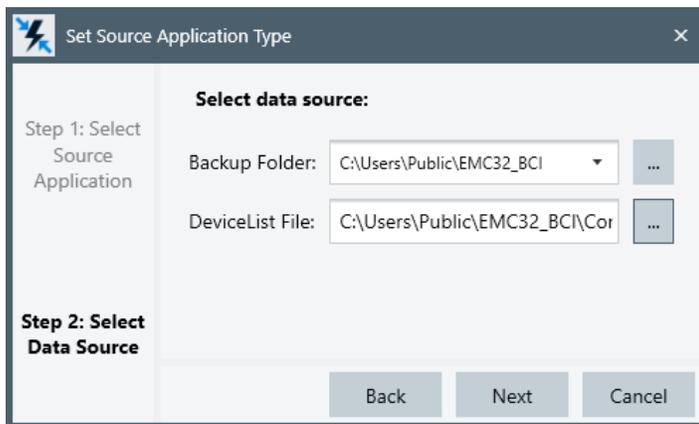


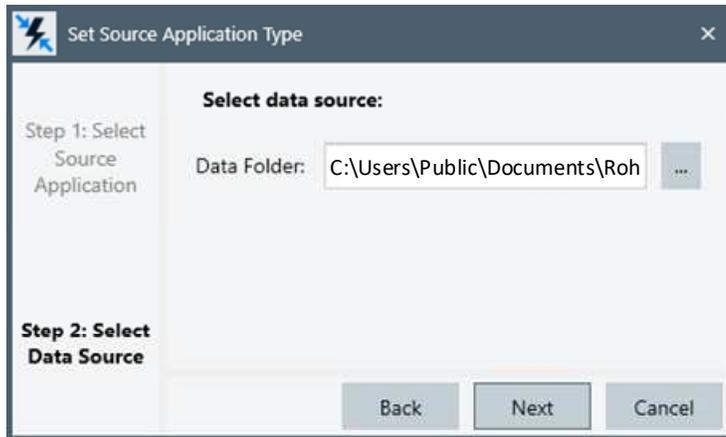
Figure 3: Selecting R&S®EMC32 backup folder and device list directories

7. Select the corresponding folder directory and click "OK".
8. Browse for the folder directory of the device list by clicking the second  button shown in Figure 3.
Note: the *.DeviceList file is usually stored in the "Configuration" folder.
9. Select the corresponding folder directory and click "OK".
10. Click "Next".
11. To start converting the backup file to the XML format, follow the instructions in Chapter 4.

3.2.3 Migrating from R&S®ES-SCAN Data Folder

To migrate the R&S®EMC32 data from the R&S®ES-SCAN data file:

1. On the migration tool dialog window (Figure 1), select "ES-SCAN data folder".
2. Click "Next".
3. Browse for the folder directory of the data folder by clicking the  button:



4. [Figure 4: Indicating the R&S®ES-SCAN data folder directory](#)
5. Select the corresponding folder directory and click "OK".
6. Click "Next".
7. To start converting the backup file to XML format, follow the instruction in Chapter 4.

4 Using the R&S®ELEKTRA Migration Tool

4.1 Overview

The R&S®ELEKTRA Migration Tool converts data from R&S®EMC32 or R&S®ES-SCAN software to an XML format readable by R&S®ELEKTRA. With the migration tool, you can migrate selected or all files within one platform.

For details on preparations needed before migration, see Chapter 2 and Chapter 5.

For details on the functions of each window in Figure 5, refer to the R&S®ELEKTRA [user manual](#):

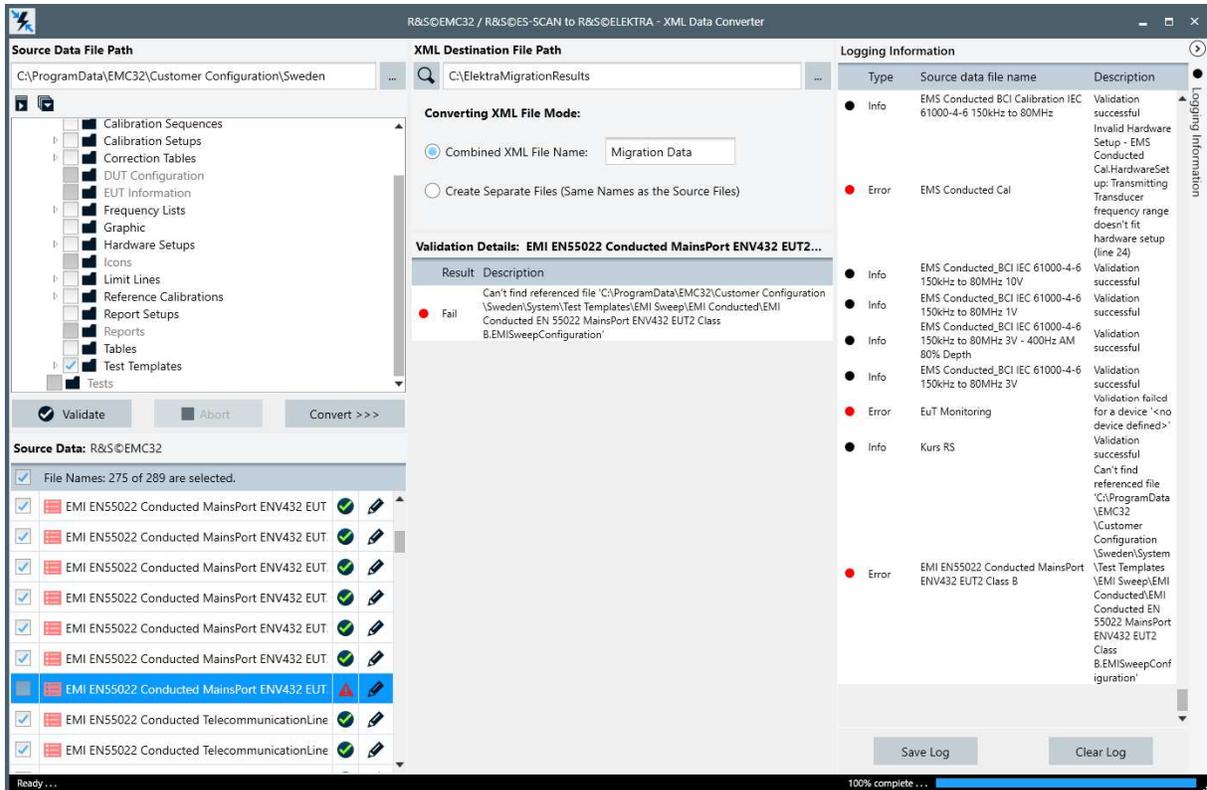


Figure 5: XML Data Converter GUI window with "CAL Adapter (Type: Transducer) - EMC32.DeviceList" highlighted

4.2 Converting XML File

To convert the source data file(s) into the XML format:

1. On the "Source Data File Path", select the folders to migrate.

We recommend that you migrate "Test Templates" first.

Note: You can select multiple folders for migration.

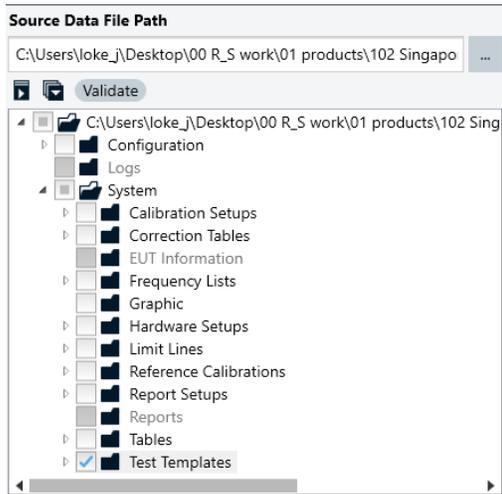


Figure 6: Folders to be migrated

2. Click "Validate".

This populates and validates the status of the files in the folder.

You cannot convert files with error messages (▲) messages. However, you can convert files with warning (▲) messages though there can be errors after migration.

See Chapter 4.3.1 for explanation of the validation messages.

See also Chapter 6 for troubleshooting tips to clear errors.

3. Convert the files by clicking "Convert >>>".

By default, the converted files are stored in the location defined in Figure 7.

To change the file destination, see Chapter 4.3.3.

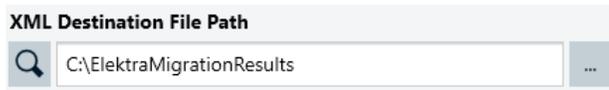


Figure 7: XML Destination File Path

By default, the migration tool combines all XML files and has a default filename defined in "Combined XML File Name" as Migration Data.

You can save the converted XML files separately. To do so, select "Create Separate Files" instead. This converts the files individually and takes the filename of the source files.

The status bar at the bottom right hand corner of the GUI (Figure 8) shows the progress and status of the conversion:



Figure 8: Status bar indicating a complete conversion

During the conversion, you can stop the conversion by clicking "Abort".

Upon complete conversion, a "Conversion Reports" pops up:

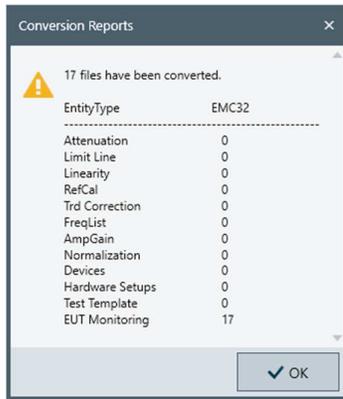


Figure 9: Conversion reports upon successful conversion

4. Click "OK".
5. To convert other folders, repeat Step 1 to Step 4.

After all the necessary files are converted into XML format, you are ready to import the converted data into R&S®ELEKTRA.

For details on how to import the XML file(s) into R&S®ELEKTRA, refer to its [user manual](#).

4.3 Useful Tips for Using the R&S®ELEKTRA Migration Tool

This section describes some of the useful tips when using the migration tool.

4.3.1 Types of Validation Messages

There are four types of validation messages:

Icon/Labels	Type	Description
● Pass ● Info	Pass	Validation successful, file is ready for conversion.
● Warning ● Warning	Warning	Validation unsuccessful. You can still proceed with the conversion without clearing the warning message.
● Fail ● Error	Error	Validation unsuccessful. You can only proceed with the conversion after clearing the error message.
● None ● Skipped	Skipped	Validation step skipped. This happens when there are errors in the file.

4.3.2 Logging Information

The "Logging Information" window displays the status descriptions of devices in a folder. Selecting a source data file automatically generates the status log, which is appended to the overall list in the "Logging Information" window.

By default, the "Logging Information" window is hidden. You can display the information by clicking , save it in TXT format or clear the information.

Saving the log file

To save the logging information:

1. Select the device source data file on the left:

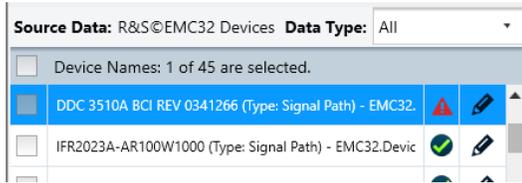


Figure 10: Device source data file

This displays the validation details and logging information on the GUI.

2. Click "Save Log" to display the log file.

This displays a log file pop-up window:

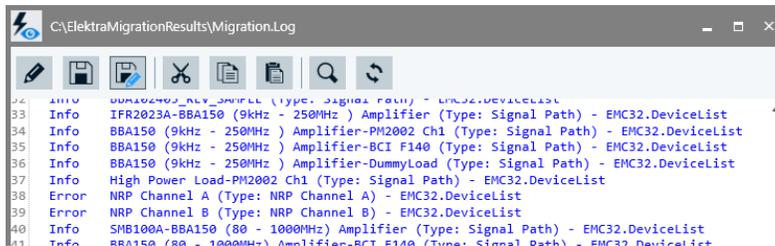


Figure 11: Log file window

Note: The log file is saved in the same directory as the XML destination file.

Editing the log file

You can edit or open the log file in the pop-up window using the various buttons on the menu bar:

Icon	Type	Description
	Open	Open a previously saved log file.
	Save	Save a log file.
	Save As	Save the current log file with another filename.
	Cut	Delete a log entry.
	Copy	Copy one or more highlighted log entries.
	Paste	Paste the copied log entries
	Find	Find or replace keywords in the log file.
	Reload File	Discard all edits and reload the log file.

Clearing the log file

You can also delete all log entries by clicking the "Clear Log" button.

Note: This is an irreversible action.

To display the log file again, click the file in the folder under the "Source Data File Path" window (for e.g., Configuration > *.DeviceList).

4.3.3 Changing File Path

Changing source data file path

By default, the source data file path displays the chosen path of the backup or the data file. To change the source data file path:

1. Click the button:

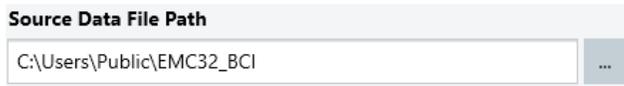


Figure 12: Source Data File Path

2. Follow the instructions on the GUI as described in Chapter 3.2.

Changing XML destination data file path

To change the XML destination data file path:

1. Click the  button shown in Figure 7.
2. Browse for the new file directory.
3. Click "OK".

5 Recommendation

5.1 Recommended Conversion Steps

We recommend that you do the following for the migration:

- ▶ Before converting the files, back up R&S®EMC32 data.
- ▶ Test templates consists of overall configurations including hardware setup, device list, signal paths, etc.
- ▶ To reduce errors during migration, always migrate the Test Templates first.
- ▶ For ease of troubleshooting in event of errors, migrate the files in smaller size. For example, EMI (conducted), EMI (radiated), EMS (conducted), EMS (radiated), RSE, etc.

5.2 Recommended Troubleshooting Steps

If you encounter issues when converting the files, check that:

1. You are using the latest R&S®EMC32 software.
2. You can open all hardware setups or test templates on R&S®EMC32 successfully without errors or warnings.

6 Error Messages

This section details the possible validation results that you can encounter during the conversion process and the suggestions to rectify the issue. The list is not exhaustive. If the problem still persists, contact R&S@Elektra Technical Support.

6.1 Missing Device Name

Validation Result	Logging Information Type	Description	Suggested Solution
● Fail	● Error	Invalid/missing antenna tower type: Device name not found	
● Fail	● Error	Invalid EMI transducer: Invalid/missing antenna tower type: Device name not found	
● Fail	● Error	Invalid Hardware Setup - xxx: Invalid EMI Transducer: Invalid/missing antenna tower type: Device name not found xxx refers to the missing hardware setup. For example: <ol style="list-style-type: none"> Electric Field Strength.HardwareSetup EN55025 Automotive Components.HardwareSetup MIL-STD-461D RE02.HardwareSetup NSA Broadband Antennas.HardwareSetup 	Missing item in R&S®EMC32 hardware setup: <ol style="list-style-type: none"> Check the existing information in R&S®EMC32 software. Fill in the missing information in R&S®EMC32 software. Validate the information. Try converting the files again.
● Fail	● Error	Invalid Hardware Setup - EN55025 Automotive Vehicle.HardwareSetup: Unknown transducer diagram type	
● Fail	● Error	Invalid Hardware Setup - Power.HardwareSetup: Invalid/missing Sidebar type: Device name not found	
● Fail	● Error	Invalid/missing Sidebar type: Device name not found	
● Fail	● Error	Invalid EMS amplifier: Device name not found	

6.2 Missing References

Validation Result	Logging Information Type	Description	Suggested Solution
● Fail	● Error	Can't find attenuation table - xxx xxx refers to the missing attenuation table. For example: <ol style="list-style-type: none"> DDC 3510A BCI FWD 0341266 Attenuation (line 560) DDC 3510A BCI REV 0341266 Attenuation (line 564) 	<ol style="list-style-type: none"> Check if the file in R&S®EMC32 is corrupted. If so, replace the file with the backup copy then try again.
● Warning	● Warning	Missing references: For example: <ol style="list-style-type: none"> Is external reference not found, default value will be used Transducer does not have correction table; default unit will be used 	Option to add the necessary reference table or data into the system. You can proceed with the conversion without the references but the migration tool converts the data as a generic or default one.

6.3 Validation Error

Validation Result	Logging Information Type	Description	Suggested Solution
		Invalid limit line 'xxx' xxx refers to the corresponding standards. For example: 1. EN 55015 Power QP 2. EN 55022 Electric Field Strength 10 m QP 3. EN 55022 Voltage on Mains QP 4. MIL-STD-461C CE01	Check if the file in R&S®EMC32 is corrupted. If so, replace the file with the backup copy then try again.
Warning	Warning	Detector of Limit Line is None (line x) x refers to the line number.	Assign a detector manually by using the right-side pane of the migration tool: a) Choose an application type b) Choose a detector type c) Apply the correction

6.4 Unknown Type

Validation Result	Logging Information Type	Description	Suggested Solution
None	Skipped	Can't identify type - validation has been skipped... Unknown device type!	Two possibilities:
Warning	Warning	EMI transducer didn't validate - Diagram type unknown	Device type not supported in R&S®ELEKTRA: a) Check the devices that are supported in R&S®ELEKTRA. b) Modify the hardware device type in the R&S®EMC32 software. c) Try converting the files again. d) Device type supported in R&S®ELEKTRA: a) Contact R&S®ELEKTRA technical support, as this could be a defect.
Fail	Error	Unknown interlock device type	Two possibilities:
Fail	Error	Invalid/missing application type (EMI, EMS, etc.) (line 4)	1. Missing item in the R&S®EMC32 hardware setup: a) Check the existing information in the R&S®EMC32 software. b) Fill in the missing information in the R&S®EMC32 software. c) Try converting the files again. 2. Device type not supported in R&S®ELEKTRA: a) Check the devices that are supported in R&S®ELEKTRA. b) Modify the hardware device type in the R&S®EMC32 software. c) Try converting the files again.
Fail	Error	Unknown transducer diagram type	
Fail	Error	Invalid connection interface, GPIB/LAN interface is available (807)	Connection interface not supported: a) Modify the interface in the R&S®EMC32 to GPIB/LAN interface, which is the supported connection interface. b) Try converting the files again.

6.5 Unsupported Parameters

Validation Result	Logging Information Type	Description	Suggested Solution
● Warning	● Warning	The formula is not supported and will be replaced by a default formula in channel 'Current'	This is due to a limitation in R&S®ELEKTRA. You can proceed to convert because the migration tool provides a default formula. Check the formula after the import into R&S®ELEKTRA. Alternatively, amend it into a suitable format in R&S®ELEKTRA.
● Warning	● Warning	Report Component Type not supported 'xxx' xxx refers to the component type. For example: 1. PageBreakLandscape 2. PageBreakPortrait 3. Protocol	R&S®ELEKTRA does not support the feature. a) Remove or replace the unsupported items in the R&S®EMC32. b) Try converting the files again.

6.6 Unavailable in R&S®ELEKTRA

Validation Result	Logging Information Type	Description	Suggested Solution
● Fail	● Error	USB interface Not Supported in R&S®ELEKTRA for NRP2	R&S®ELEKTRA does not support the feature. a) Remove or replace the unsupported items in the R&S®EMC32. b) Try converting the files again.

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