
ASCII Conversion of Binary Data from Test Receiver for Generation of Test Report on PC

Application Note 1EE21_4L

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Products:

ESHS 20/30, ESVS 20/30

ESS, ESCS

ESVN 20/30/40, ESN



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1. INTRODUCTION

The models with built-in monitor of the ESXS family of test receivers as well as the instruments ESN, ESVN and ESCS incorporate a 3 1/2" microfloppy disk drive. The floppy serves as a mass memory for instrument settings and test results. The data are stored on the disk in the internal, binary ESXS format, which saves space and time but does not allow external evaluation of data.

2. PROBLEM: Processing of Binary Data on PC

It is frequently desired to process the results stored on the floppy on a PC, eg for the generation of customer-specific test reports by means of a word processing system. To enable processing on an external PC, the binary data usually need conversion into an ASCII format. This is possible by means of the **ESXS2ASC.EXE** program, which is described under 4. below. The program is available free of charge from your Rohde & Schwarz representative.

The ESXS2ASC.EXE program does not convert all the data stored on the floppy but essentially those needed for receiver-generated test reports on a printer or plotter. The documentation generated on an external PC using the converted data thus corresponds to the report generated directly by the receiver itself.

To evaluate further data stored on the floppy, eg the instrument settings, a C program can be generated. The data declarations required for this are described in files **LLI.XH**, **TDF.XH**, **TDS.XH**, **RES.XH**, **SPS.XH** and **SYSDFS.H**, which are also contained in file **E109053.EXE**.

Graphics can be stored on the floppy in the form of ASCII files in HP-GL format (key entries on receiver front panel: FLOPPY ⇒ softkey STORE ⇒ softkey HP-GL FILE). They are thus suitable for further processing and will not be discussed here.

3. Data Stored on Floppy

The data stored on the floppy are in six formats identified by different extensions:

Format *.RES:

- receiver settings (including special functions, scan data, options and settings for reports)
- activated limit lines
- activated transducer factor
- transducer set (with factors belonging to activated set)
- test results including:
 - all results obtained in previous scan (level/1st detector, level/2nd detector, validity byte)
 - all (max. 400) subrange maxima of both detectors (frequencies, levels, limit lines exceeded)
 - all (max. 400) results obtained in follow-up measurements, if any (frequencies, levels, phase angles)
 - scan data sets used for measuring the data

Format *.SPC: corresponds to *.RES format except for scan results

Format *.LLI: limit lines

Format *.TDF: transducer factors

Format *.TDS: transducer set with active factors

Format *.GRA: scan results in HP-GL format

Formats *.SPC, *.LLI, *.TDF and *.TDS are contained in ***.RES**.

4. SOLUTION: Conversion Program ESXS2ASC.EXE

Conversion program **ESXS2ASC.EXE** has the following characteristics:

- It supports the *.RES, *.SPC, *.LLI, *.TDF and *.TDS ESXS formats which are distinguished by their extensions.
- **ESXS2ASC.EXE** is a conversion program without user interface.
- **ESXS2ASC.EXE** has batch processing capability: it supplies an error status message: 0 = no error, 1 = error.
- The program is controlled via command lines into which the desired parameters are entered.

Call of ESXS2ASC: ESXS2ASC ESXS file [Output file] [Options ...]

Program parameters:

Input parameters: name of ESXS file with extension .RES, .SPC, .LLI, .TDF, or .TDS must be entered.

Output parameters: any desired file name in DOS format can be entered optionally. In such case the program is output to this file. If no file name is specified, the program is output to Standard Redir.

Command line parameters:

- **/?:** The copyright, ESXS2ASC version and the syntax with typical calls are listed.
- **/VER:** The receiver model and the firmware version used for storing the ESXS file are output.
- **/CSD:** The columns of the converted data are separated by a semicolon (;) (format: **Comma Separated Data**) and can be read as a text file into a table using EXCEL or any other spreadsheet routine. The frequency and level pairs measured in the scans, the limit lines, transducer factors and the transducer set can then be represented in a chart.
- **/CSD=<x>:** corresponds to option /CSD except that the character for column separation can be defined by the user. Characters such as > or | are unsuitable as they are interpreted otherwise by DOS in the command line.
- **/CSDG:** corresponds to option /CSD. Instead of the decimal point customary in English programs, the German decimal comma is used.

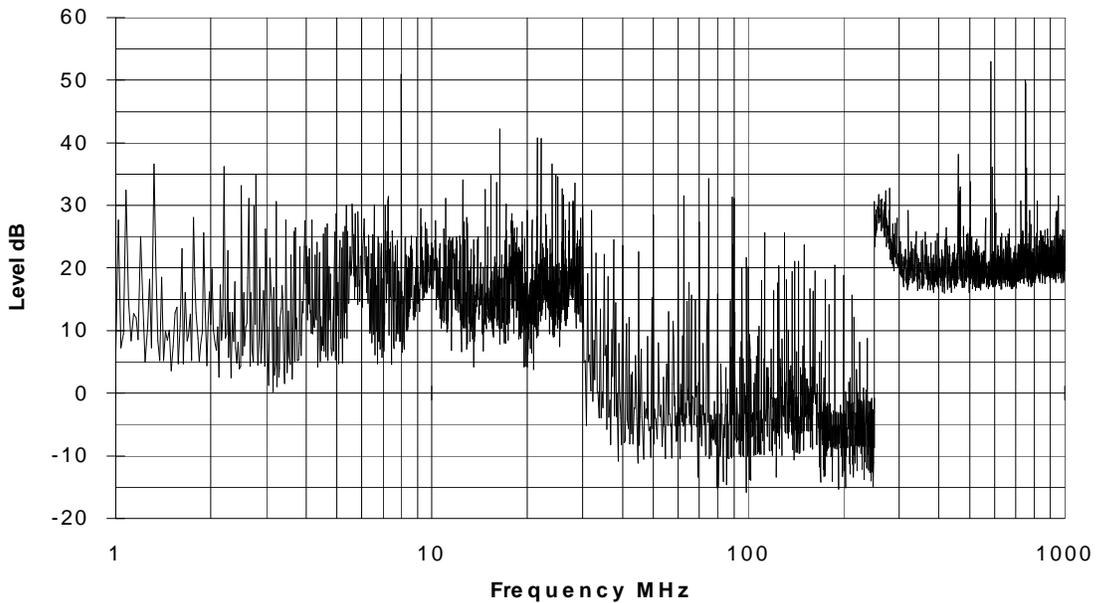
Example of call:

esxs2asc input.res output.dok/ver/csd

esxs 2asc input.res/csd=! > output.dok

The output format of the converted data depends on the file format, which is determined by the extension, and on the selected options. The ASCII format is similar to the format used by the plotter, the scan results are however not represented in the form of a chart. Charts can be generated under WINDOWS using the EXCEL spreadsheet routine. In this way, scan results can be integrated into programs such as WinWord, for example.

Example: chart generated from converted *.RES data by means of EXCEL



Example: output of converted limit line data

Firmware Ver: 3.06
 Model: ESVS30
 Limit Line Name: VDE_T20
 Frequency: Level dB:

Frequency	Level dB
20.0000 MHz	60.0
45.0000 MHz	60.0
45.0000 MHz	91.0
60.0000 MHz	91.0
60.0000 MHz	60.0
90.0000 MHz	60.0
90.0000 MHz	91.0
120.0000 MHz	91.0
120.0000 MHz	60.0
160.0000 MHz	60.0
160.0000 MHz	91.0
220.0000 MHz	91.0
220.0000 MHz	60.0
270.0000 MHz	60.0
330.0000 MHz	44.0
400.0000 MHz	44.0

Availability of programs

All application programs mentioned in this application note are available at the nearest Rohde & Schwarz representative.

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