



Products: UPL

Transferring Files from a UPL Audio Analyzer to an external PC Via the RS-232-C Interface

Application Note

The UPL Audio Analyzer can be remote-controlled via the IEEE bus or the RS-232-C interface. Test results are output either individually or in blocks. ASCII or binary files such as setup files can be transferred to the audio analyzer from an external controller.

This Application transfers files from the audio analyzer to an external controller via the serial interface. Utility programs for the audio analyzer and the external controller (PC) are required.



Contents

1 Overview.....	2
2 Hardware and Software Requirements	3
Hardware Requirements	3
Software Requirements.....	3
3 Connecting the UPL with the Computer	3
4 Installing the Software	3
5 Transferring Data.....	4
6 Ordering information.....	6

1 Overview

The UPL Audio Analyzer can be remote-controlled via either the IEEE bus or the RS-232-C interface. Test results are output either individually or in blocks. ASCII or binary files such as setup files can be transferred to the audio analyzer from an external controller PC in a master-slave setup. This makes it possible to have instrument setups or other data centrally managed by a server and to transfer them to the audio analyzer for the particular measurement task.

Up to now, to transfer data in the opposite direction it has been necessary to transfer files stored on the UPL (e.g. export files or stored measurement graphics) to the controller PC manually, using a floppy disk. Files could not be transferred from the UPL to the PC via the IEEE bus, since this meant that the audio analyzer would temporarily have to take over control of the bus; this feature is not generally supported.

This application transfers files from the audio analyzer to an external PC controller via the serial interface. Utility programs for both the audio analyzer and the external PC are required for this purpose. The programs SNDFILE.BAS, DRV_INST.BAS and SER_IN.EXE are stored in the C:\UPL\USER directory (firmware version 3.0 or later) in the UPL audio analyzer. These programs are also supplied with this Application Note.

2 Hardware and Software Requirements

Hardware Requirements

- A serial-to-serial cable, wired for RTS/CTS handshake. Send Data and Receive Data as well as RTS and CTS have to be cross-wired. Such cables, referred to as serial data cables, are available in computer shops and are used for the Interlink DOS routines, for example.
- An external PC with DOS, or a DOS window in the Windows operating system and a free RS-232-C interface.

Software Requirements

- Firmware version ≥ 2.00 for the UPL Audio Analyzer.
- Option UPL-B4 (IEEE-BUS) for remote operation via the IEEE Bus.
- Option UPL-B10 (Auto Sequence Control).
- SNDFILE.BAS program on the audio analyzer.
- SER_IN.EXE program on the external PC.
- The driver for the COM interface must be loaded in the audio analyzer, the DRV_INST.BAS utility program is used for a one-off setup.

3 Connecting the UPL with the Computer

The COM2 interface from the UPL is used by default for data transfer. To change the interface used, edit the SNDFILE.BAS (Basic) program.

The COM port used in the receiving PC is defined in the SER_IN.EXE program on the PC by a transfer parameter. The default port is COM1.

Connect the data cable from the appropriate COM interface of the UPL to the appropriate COM port of the controller PC.

4 Installing the Software

1. Install the COM interface driver on the UPL:
Copy the DRV_INST.BAS program to the Audio Analyzer UPL and start it. The program checks the entries in the CONFIG.SYS file and looks for the COMX.SYS driver.
 - If this driver has already been installed, the following message will be displayed on the screen:
COM- driver already installed
 - Otherwise the driver is added to the CONFIG.SYS file. You are asked to confirm a restart for the audio analyzer or to abort the program without restart.

Important: The SNDFILE.BAS program will not work until the COM driver has been initialized by booting.

2. Install SER_in.EXE on the PC

5 Transferring Data

Important: Always start SER_IN.EXE on the controller PC before starting SNDFILE.BAS on the UPL.

Either transfer data manually or by remote control from the IEEE Bus

Manual Transfer

1. On the PC start the SER_IN program by inputing:

```
> SER_IN <file name> [<parameters>]
```

In most cases just the command SER_IN *filename* is sufficient.

The file to transfer will be stored on the PC under *filename*, include the directory path as required.

We do not recommend storing the data on a floppy disk, as reading the disk may take such a long time that data transfer conflicts arise.

All parameters must be input in the sequence, shown by the help (below).

For unspecified parameters the last value is taken

Do not change the baud rate, parity, data bits or stop bits unless the program SNDFILE.BAS is modified accordingly.

For help with parameters, input:

```
> SER_IN ?
```

The following help appears on the screen:

Store serial bit stream to file!

Cmnd-Line:	Progname	Filename	COM	Baud	Pari	Dbits	Sbits	Irq	Base-Addr	Timeout
Default:	SER_IN	myfile.txt	1	115200	0	8	1	4	4	100
Range:		HD file	1	300	0=NO	7	1	1	0=0x2E0	10ms
		recomme	:	:	1=Even	8	2	:	1=0x2E8	:
		nded	4	115200	2=Odd			15	2=0x2F8	10000ms
									3=0x3E8	
									4=0x3F8	

Handshake always RTS/CTS!

2. On the UPL, instruct the UPL which file to send.

Use the Info Text line in the Display panel to enter the name of the file to send. In this case the info line information has nothing to do with the actual setup loaded but serves as string buffer for the program SNDFILE.BAS.

Include the path name if the file to be sent is not contained in the current directory on the UPL.

3. On the UPL start the data transfer by selecting SNDFILE from the Options panel (or remotely with a IEEE command). Data transmission will now begin.

4. After the data has been transferred, check the Info Text line in the File panel to confirm file transfer:
 - *'xxxxxx bytes sent filename'*
data transfer was completed. Compare the number of characters sent with the length of the file received to confirm that the complete file was transferred
 - *'file not found'*
data transfer was not successful. The file specified in step 2 could not be found on UPL.

Operation via IEEE bus:

1. Send the following command via the IEC/IEEE bus:

MMEM:STOR:INFO 'filename'

This command defines the file name and the path of the file to be transferred from the UPL

2. Call the SER_IN.EXE program using the *storage name* and the *port number* as parameters. The storage name is the name under which the file to be transferred will be stored, including the path, if applicable. The port number is the number of the COM port used.
3. To start the data transfer send the following command via the IEC/IEEE bus:

SYST:PROG:EXEC 'C:\UPL\USER\SNDFILE'

Wait until the macro has been executed. The status can be checked by querying the OPC register.

4. Send the following query via the IEC/IEEE bus:

MMEM:STOR:INFO?

Read the response from the UPL:

- *'xxxxxx bytes sent filename'*
data transfer was completed. Compare the number of characters sent with the length of the file received to confirm that the complete file was transferred
- *'file not found'*
data transfer was not successful. The file specified in step 2 could not be found on UPL.

6 Ordering information

AUDIO ANALYZER		
UPL	DC ... 110 kHz	1078.2008.06
Option UPL-B4	Remote Control for IEC 625/IEEE-488 and RS232	1078.3804.02
Option UPL-B10	Universal Sequence Controller	1078.3904.02



ROHDE & SCHWARZ

ROHDE & SCHWARZ GmbH & Co. KG · Mühlendorfstraße 15 · D-81671 München · P.O.B 80 14 69 · D-81614 München ·
Telephone +49 89 4129 -0 · Fax +49 89 4129 - 13777 · Internet: <http://www.rohde-schwarz.com>

*This application note and the supplied programs may only be used subject to the conditions of use set forth in the
download area of the Rohde & Schwarz website.*