

# R&S® AllAudio Integrated Digital Audio Software

For recording, playback,  
mixing and distribution of  
audio signals



# R&S®AllAudio Integrated Digital Audio Software At a glance

R&S®AllAudio is PC-based software for the simultaneous recording and playback of audio signals and for distributing these signals in local and global networks.

R&S®AllAudio, with its functionality, rounds out the range of Rohde&Schwarz spectrum management and radiomonitoring systems. In such systems, R&S®AllAudio can replace analog audio switch matrices and multiplexers. The integrated audio database makes management of all recordings easy and convenient.

R&S®AllAudio processes digital audio signals from receivers and direction finders directly and without loss, and controls system-wide access to this data. The data is accessed either from the R&S®AllAudio main window or via control elements embedded in other software applications. The use of compression algorithms means less bandwidth is needed to distribute audio signals, even via wide area networks (WAN). A software-based intercom facilitates teamwork and coordination.

## Key facts

- Integrated digital recording, instant playback, editing and distribution of audio signals without additional multiplexers and cabling
- Automatic search and marking of activity in audio recordings
- Integrated InterCom (optional)
- Easy and convenient management of recorded audio signals in an integrated database (optional)
- Embedded controls in the Rohde&Schwarz receiver and direction finder software user interfaces
- Connection to Rohde&Schwarz system databases
- Digitization of analog audio signals with selectable quality (optional)

Start	Stop	Time	#R	Source	Net Designator	Description	Comment	Status
23.09.2010 10:24:57	10:28:10	00:03:13	9	2	10.6.30.9	MUC	ATC	
23.09.2010 10:17:41	10:24:50	00:07:09	1	8	10.6.30.9	MUC	ATC	
23.09.2010 10:14:42	10:16:21	00:01:39	1	1	10.6.30.9	MUC	ATC	
23.09.2010 10:12:53	10:14:32	00:01:39	8	1	10.6.30.9	MUC	ATC	
22.09.2010 13:52:03	13:52:10	00:00:07	1	1	Micro		bookmark	
22.09.2010 13:52:01	13:52:10	00:00:09	1	1	ESMD		Radio	

Timestamp	Comment
10:26:53	Tower
10:26:58	not yet identified airline
10:27:11	Tower
10:27:17	Lufthansa pilot
10:27:53	Weather report

Timestamp	Frequency	Bandwidth	Modulation
10:26:53	123.870 MHz	4.880 kHz	AM
10:26:53	123.900 MHz	4.880 kHz	AM
10:27:51	123.120 MHz	4.880 kHz	AM
10:27:57	122.666 MHz	4.880 kHz	AM

Start	Stop	Time	Filename	Comment
10:26:53	10:27:28	00:00:35	3A54EE219CE74935A28B86C72AAA2D0B0000.wav	
10:27:51	10:28:10	00:00:19	3A54EE219CE74935A28B86C72AAA2D0B0001.wav	

Audio database overview window. All entries can be sorted and displayed according to various criteria. The user also receives additional detailed information about the selected entry, e.g. the recording source or added comments.

# R&S®AllAudio Integrated Digital Audio Software Benefits and key features

## **Fast and easy access to current and recorded audio data**

- Easy to use
  - Separate or embedded user interface and control elements
  - Access to recordings in integrated audio database
- Maximum flexibility when working
  - Simultaneous access to multiple audio channels
  - Instant playback from ring buffer or from database
  - Settable playback speed for recordings

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## **Integration into R&S®ARGUS and R&S®RAMON systems**

- Access and data distribution via LAN/WAN
  - Flexible, system-wide signal distribution
- Flexible user administration and powerful intercom functionality for work quick and effective work

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## **Automatic functions for enhanced efficiency**

- Automatic recording control
- Automatic search and marking of activity in audio recordings

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## **From pre-sale to service. At your doorstep.**

- Worldwide network of Rohde&Schwarz experts in over 70 countries

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# Fast and easy access to current and recorded audio data

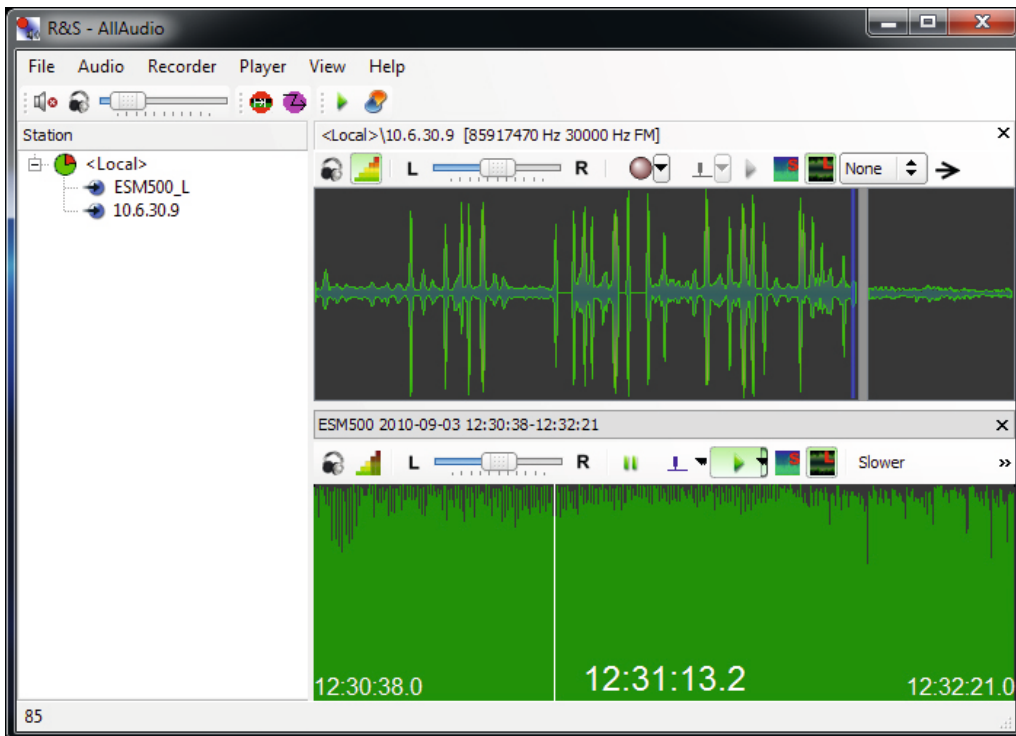
## Easy to use

### Separate or embedded user interface and control elements

Audio playback and recording can be controlled either via the R&S®AllAudio main window, or via an R&S®AllAudio control window embedded in the user interface of other Rohde&Schwarz software.

All available local and remote audio sources are listed in a tree structure in the left pane of the main window. The individual control and display windows for the currently selected audio sources are found in the right pane. Audio monitoring, recording, playback as well as volume and balance are controlled via these windows. This makes it possible, for example, to distribute two different audio signals between a headphone's right and left channels in order to monitor both signals. The master volume can be controlled via the main toolbar.

To make the software even more user-friendly, these control functions can be integrated into the user interface of Rohde&Schwarz receivers and direction finders.



R&S®AllAudio main window.

### **Access to recordings in integrated audio database**

Signals are recorded directly to the local PC or to a central server. The capacity of today's hard disks allows continuous recording over several days or weeks. Audio squelch control and compression of recorded data also help to record for long periods of time without user intervention.

All recordings are managed in an integrated local and/or central database. Central, server-based data storage allows simultaneous access by several users.

Users can add any number of comments to the automatically registered data, which includes recording time, receive frequency, demodulation bandwidth and station name. The time the comments are entered is also saved. Comments can be added in writing or vocally using the headset microphone.

The database and recordings can be saved and exported. The administrative information can be stored in the database on the PC. In this way, the user always sees all recordings and, when accessing exported recordings, is given information about where to find them. Selected audio data can be exported as a WAV file and saved to an external storage medium.

### **Maximum flexibility when working**

#### **Simultaneous access to multiple audio channels**

R&S®AllAudio processes several audio signal sources in parallel and can distribute, record, play back and archive their AF. Possible sources are either digital audio signals which can be fed in directly (for example from Rohde&Schwarz receivers and direction finders) or analog audio signals from receivers and microphones, which can be digitized in a selectable quality using a sound card.

#### **Instant playback from ring buffer or from database**

An instant playback buffer is available for all connected audio sources. The length of this "online memory" is adjustable up to a maximum of five minutes. Users can instantly play back the last five minutes starting at any point in time by simply clicking the corresponding location in the playback buffer window. Audio recordings can be virtually started in the past. This ensures that all relevant information will be recorded and preserved.

#### **Settable playback speed for recordings**

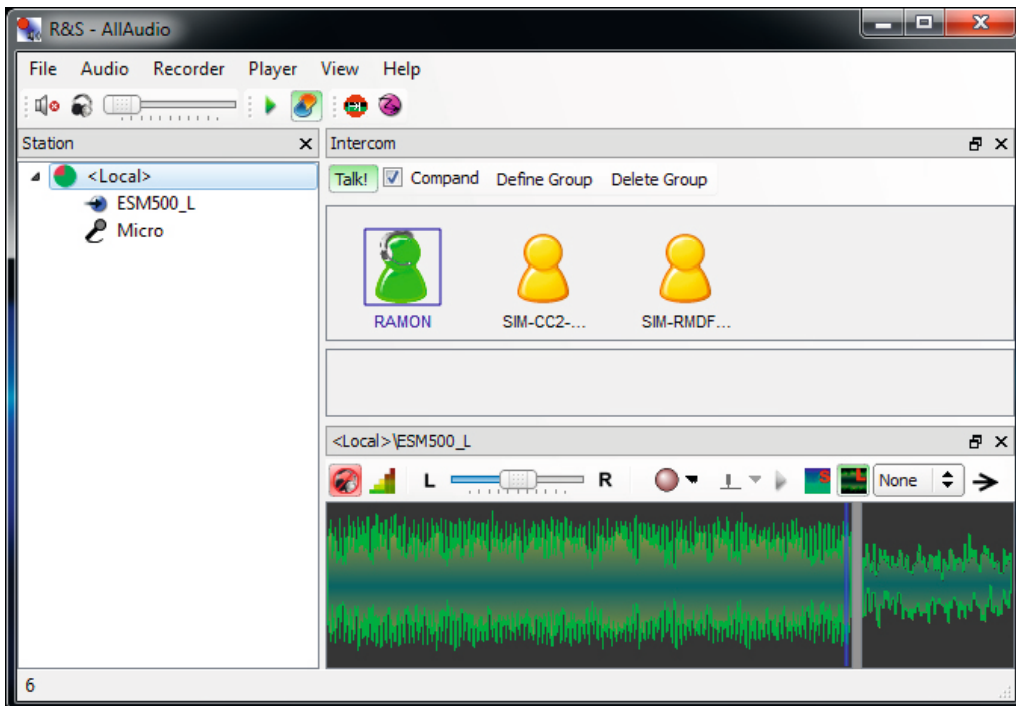
When recorded audio data is played back, the playback speed can be adjusted. This is also possible when audio recordings are running simultaneously.

# Integration into R&S®ARGUS and R&S®RAMON systems

## Access and data distribution via LAN/WAN

### Flexible, system-wide signal distribution

In R&S®RAMON and R&S®ARGUS systems, audio signals are conveniently distributed using software to switch and mix input channels. Each channel has a data buffer with five minutes of available capacity. Here, the user can repeat passages by selecting them with the mouse. Output is via headphones and optionally via loudspeakers. Signals can also be switched separately to up to three other analog outputs for further analyses. The existing LAN or WAN is used to distribute signals between stations. This is accomplished with state-of-the-art multicast technology, which is also used for Internet radio, for example. As a result, signals of interest can be analyzed simultaneously on all workstations. The need for multiplexers or laborious cabling is eliminated. For transmission via WAN (router, modem), signals can be compressed so that voice signals can be transferred at a data rate as low as 4800 baud per channel.



R&S®AllAudio user interface with intercom window.



## Flexible user administration and powerful intercom functionality for quick and effective work

### Flexible user administration

In the user administration, user-specific access and editing rights are defined. This can apply, for example, to remote access of R&S®AllAudio databases or to defining which system receivers each user can access for listening or recording purposes. In R&S®RAMON-based systems, this is accomplished with the R&S®RAMON user management. In other systems, these settings can be defined using the Windows user administration.

### Integrated, software-based intercom

Using the optional, software-based intercom, operators can, for example, report the frequency of a recorded signal they cannot edit themselves to a colleague (point-to-point) or to several colleagues (point-to-multipoint). This makes work in a team much easier. In the integrated intercom window, the operator simply selects the person of choice and starts talking. Other audio signals can be muted during the conversation. This is accomplished using software and, with the exception of a wired headset, without additional hardware.



R&S®AllAudio is ideal for radiomonitoring systems with spatially distributed workstations.

# Automatic functions for enhanced efficiency

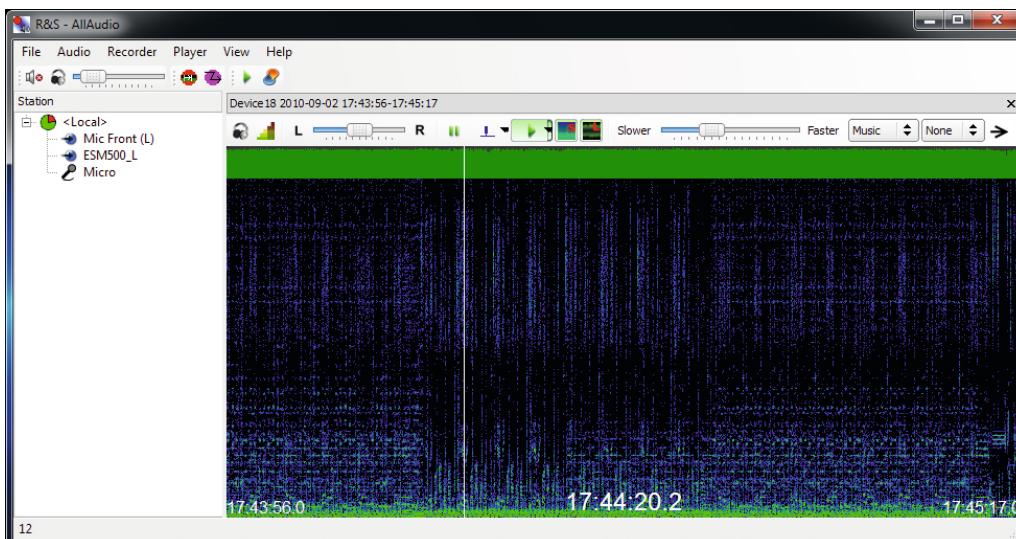
## Automatic recording control

Several modes are available for automatic control of recording:

- Level-triggered recording
- Activity-triggered recording (VOX control)
- Externally triggered recording
- Time-triggered recording

## Automatic search and marking of activity in audio recordings

For unattended, long-term audio recordings from HF signal sources, it is important to quickly detect passages that contain speech. R&S®AllAudio can recognize and mark the relevant passages so that the user can instantly select them.



R&S®AllAudio playback window: Available audio sources are shown in the left pane. In the right pane, one of the playback windows can be seen. The five minute ring buffer means audio recordings can be started virtually in the past.



# From pre-sale to service. At your doorstep.

The Rohde&Schwarz network in over 70 countries ensures optimum on-site support by highly qualified experts. User risks are reduced to a minimum at all stages of the project:

- Solution finding/purchase
- Technical startup/application development/integration
- Training
- Operation/calibration/repair



# Specifications

Specifications		
<b>Basic version</b>		
Signal quality		telephone quality (8 kHz, 16 bit), radio quality (22 kHz, 16 bit) or high audio quality (44 kHz, 16 bit), R&S®AMMOS® 16k, R&S®AMMOS® 32k
Frequency range	telephone quality	20 Hz to 3.5 kHz
	radio quality	20 Hz to 10 kHz
	high audio quality	20 Hz to 20 kHz
Compression rates for data transmission via LAN/WAN		2-fold (ADPCM), 4-fold (GSM), 8-fold (CELP)
Analog audio input channels	2 audio channels for	<ul style="list-style-type: none"> <li>■ analog audio (via sound card)</li> <li>■ digital audio from Rohde&amp;Schwarz instruments (e.g. R&amp;S®DDF0xA/E, R&amp;S®EM100, R&amp;S®ESMD)</li> <li>■ digital audio from other R&amp;S®AFBASIC modules (TCP/IP point-to-point connection via LAN/WAN)</li> <li>■ digital audio from other R&amp;S®AFBASIC modules (UDP/IP point-to-multipoint connection via LAN)</li> </ul>
Analog audio output channels		2 analog channels for audio monitoring by headset or loudspeaker (left and/or right)
Audio matrix and mixer		audio input channels can be mixed or switched to the two audio monitoring outputs or to other optional output channels
Audio distribution		output and distribution to other R&S®AFBASIC modules via configurable audio channels
Time for instant playback	settable	up to 5-minute audio buffer
Interfaces		integrated interfaces to R&S®RAMON and R&S®ARGUS databases and to Rohde&Schwarz receiver and direction finder systems
<b>Options</b>		
R&S®AF-D8		8 additional digital audio input channels
R&S®AF-REC		audio recording and local audio database
	functions	<ul style="list-style-type: none"> <li>■ digital audio recording to hard disk</li> <li>■ search and playback while recording</li> <li>■ entry of bookmarks and audio comments (via microphone) during recording or playback</li> </ul>
	control modes	<ul style="list-style-type: none"> <li>■ manually triggered recording</li> <li>■ level-triggered recording</li> <li>■ activity-triggered recording (VOX control)</li> <li>■ externally triggered recording (e.g. from R&amp;S®RAMON systems)</li> <li>■ time-triggered recording</li> </ul>
	management of saved audio	<ul style="list-style-type: none"> <li>■ integrated local database with backup and export functions</li> <li>■ management of audio sessions that contain one or more recorded WAV files</li> <li>■ storage of time stamps, time-referenced bookmarks and receiver names</li> </ul>
	audio server	server for controlling remote access from other R&S®AllAudio workstations (see also R&S®AF-RREC)
R&S®AF-RREC		remote access to audio database, remote-controlled recording
R&S®AF-ICM		voice communications between operators in a LAN/WAN
	typical modes	<ul style="list-style-type: none"> <li>■ between two users (point-to-point)</li> <li>■ within a user group (LAN: multipoint-to-multipoint; WAN: point-to-multipoint)</li> <li>■ automatic muting of audio signals during a call</li> </ul>

# Ordering information

Designation	Type	Order No.
<b>Basic version</b>		
Basic Module of the R&S®AllAudio Integrated Digital Audio Software, licensing via softlock	R&S®AFBASIC	3022.6023.02
Basic Module of the R&S®AllAudio Integrated Digital Audio Software, licensing via dongle	R&S®AFBASIC	3022.6023.03
Basic Module of the R&S®AllAudio Integrated Digital Audio Software, licensing via dongle at R&S®RAMON/ARGUS workstations	R&S®AFBASIC	3022.6023.04
<b>Options</b>		
R&S®AllAudio Digital Channel Expansion	R&S®AF-D8	3022.6469.02
R&S®AllAudio Recording and Database	R&S®AF-REC	3022.6117.02
R&S®AllAudio Remote Recording and Database	R&S®AF-RREC	3022.6223.02
R&S®AllAudio Intercom	R&S®AF-ICM	3022.6317.02

Your Rohde & Schwarz sales partner will be pleased to help you find the optimum configuration.  
 To find your nearest Rohde & Schwarz representative, visit  
[www.sales.rohde-schwarz.com](http://www.sales.rohde-schwarz.com)

## Service that adds value

- ▮ Worldwide
- ▮ Local and personalized
- ▮ Customized and flexible
- ▮ Uncompromising quality
- ▮ Long-term dependability

## About Rohde & Schwarz

The Rohde & Schwarz electronics group is a leading supplier of solutions in the fields of test and measurement, broadcast and media, secure communications, cyber-security, and radiomonitoring and radiolocation. Founded more than 80 years ago, this independent global company has an extensive sales network and is present in more than 70 countries. The company is headquartered in Munich, Germany.

## Sustainable product design

- ▮ Environmental compatibility and eco-footprint
- ▮ Energy efficiency and low emissions
- ▮ Longevity and optimized total cost of ownership

Certified Quality Management

**ISO 9001**

Certified Environmental Management

**ISO 14001**

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