

R&S® Series5200 RADIOS

Voice and data for ATC ground-to-air communications

R&S® Series5200 ATC radios combine in a very compact form factor a secure and flexible architecture with excellent RF performance for today's and future full IP communications solutions.

Ready for future full IP communications systems

ATC systems are evolving toward flexible and scalable IP architectures based on standardized network elements. The R&S® Series5200 radio interprets this changing scenario and goes beyond the simple concept of ATC radio. The R&S® Series5200 is an advanced and fully integrated network element that also provides an RF link to the aircraft for voice or data ATC communications. Like any other IP network element, such as a server or a router, the R&S® Series5200 can be easily integrated even in the most complex network infrastructures, playing the role of "air gateway" connecting the aircraft to the ground communications infrastructure. It goes without saying that the R&S® Series5200 ATC radio remains the best in class with respect to radio frequency parameters, ensuring the highest communications quality and reliability even in challenging RF installations.

Secure by design

Development of the R&S® Series5200 focused on security as a prerequisite for reliable operations of the ANSP's critical communications infrastructures. The result: an intrinsically secure radio architecture, based on a two-level approach, that prevents cyberattacks as well as contains and minimizes their impact. The multiple IP interfaces of the R&S® Series5200 combined with an advanced hardware architecture and a sophisticated encapsulation of the software processes ensure complete isolation between the main and backup voice networks and the monitoring network.

Reduced operational costs

R&S® Series5200 radios require almost no scheduled maintenance. Moreover, the fully remote control capabilities and an extremely simplified radio repair concept dramati-



cally decrease the need for intervention of the maintenance personnel at the radio stations. This significantly reduces operational costs.

Voice and data integration

The R&S® Series5200 supports both amplitude modulation for voice communications as well as ACARS and VDL2 for data links. The outstanding RF characteristics, which exceed the most demanding system requirements of civil air traffic control, simplify radio installation even in the most challenging environments, minimizing the need for external RF components.

Key facts

- ▶ VHF band and UHF band version
- ▶ Split site (TX and RX) and transceiver (TRX) configuration
- ▶ Secure hardened hardware and software architecture
- ▶ AM-DSB for voice communications
- ▶ VDL mode 2 and ACARS data link
- ▶ VoIP (ED 137C)

Product Flyer | Version 03.00

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SPECIFICATIONS IN BRIEF

Frequency range

- ▶ VHF: 112 MHz to 156 MHz
- ▶ UHF: 225 MHz to 400 MHz
- ▶ Channel spacing: 25 kHz and 8.33 kHz

Waveforms

- ▶ AM-DSB in line with EN300676 (VHF) and EN302617 (UHF)
- ▶ VDL2 in line with EN301841

Audio and data interfaces

- ▶ Two 4WE&M for analog voice
- ▶ Five Ethernet interfaces for remote operations with main and backup VCSs and RCMS
- ▶ One Ethernet interface for local operation

TX output power

- ▶ 50 W carrier

RX sensitivity

- ▶ VHF AM: -107 dBm, 12 dB SINAD
- ▶ UHF AM: -105 dBm, 12 dB SINAD
- ▶ VHF VDL2: -98 dBm, BER < 10⁻³

Environmental data

- ▶ Operating temperature range: -20°C to +55°C
- ▶ Humidity: < 95% at +40°C

Power supply

- ▶ Redundant AC and DC input with automatic switchover
- ▶ AC: 115 V to 230 V
- ▶ DC: 19 V to 32 V

VoIP

- ▶ Up to ten VCS sessions in line with ED 137C vol. 1
- ▶ Up to four recorder sessions in line with ED 137C vol. 4
- ▶ Eurocontrol SNMP MIB in line with ED 137C vol. 5
- ▶ G.711 and G.729 voice codecs

Safety

- ▶ Detection of simultaneous transmissions (DSiT) function
- ▶ Automatic 1+1 and N+M radio redundancy

Maintenance

- ▶ NTP based automatic oscillator adjustment for calibration-free operations

Configuration

- ▶ Local and remote configuration via secure web server
- ▶ Removable radio identity (R-ID) card for immediate software and configuration transfer (e.g. radio repair)

Dimensions

- ▶ Transmitter and transceiver: ½ 19", 2 HU
- ▶ Receiver: ½ 19", 1 HU

R&S®S5200VR receiver

R&S®S5200VX transceiver

R&S®S5200VT transmitter

