

# THE ROHDE & SCHWARZ EVOLUTION OF HF

HF communications is in our DNA

Only those with experience of the past can face the challenges of the future.

**2022**

## R&S®SK4105 and R&S®SK4110 HF high-power transmitter systems

- ▶ 5 kW and 10 kW output power in standard 19" racks
- ▶ Fourth generation of HF data communications with ALE-4G
- ▶ HF modem with up to 240 kbit/s and 48 kHz channel bandwidth
- ▶ Minimal total cost of ownership thanks to innovative liquid cooling technology



**2000s**

## R&S®M3SR Series 4100 HF software defined radio family

- ▶ Power classes: 150 W, 500 W, 1 kW and 4kW (HF broadband)
- ▶ Third generation of HF data communications with ALE-3G
- ▶ Frequency hopping capability, embedded software COMSEC
- ▶ HF House



**1990s**

## R&S®XK516 HF airborne transceiver

- ▶ Civil aviation approved 400 W HF transceiver
- ▶ Antenna tuning unit R&S®FK516
- ▶ Approved for HF data link in line with ARINC



## R&S®XK2000 HF radio family

- ▶ Second generation of HF data communications with ALIS and automatic link establishment (ALE) in line with MIL-STDs
- ▶ Data rate of up to 5.4 kbit/s
- ▶ Power classes: 150 W, 500 W, 1 kW and 4 kW (HF broadband)



**1980s**



## R&S®HF850 HF radio family

- ▶ First generation of microprocessor-controlled transceivers
- ▶ Frequency hopping capability
- ▶ Automatic link setup communications processor R&S®GP853 controls RF connections with a data rate of up to 2.4 kbit/s
- ▶ R&S®ALIS HF modem with automatic channel selection and link setup (proprietary Rohde & Schwarz ALE standard)

**1970s**

## R&S®VK20 HF transmitter

- ▶ Tube transmitter
- ▶ Output power of 20 kW
- ▶ Frequency range of 1.5 MHz to 30 MHz

**1950s**

## First shortwave tube transmitters: R&S®SK010 / SK050 / SK080 / SK1 (100 W to 1 kW)

- ▶ Stationary and mobile versions
- ▶ First synthesizer, i.e. oscillating crystals no longer need to be changed
- ▶ Modulation types: AM/FM, tactile radio (Morse), (radio)telephony.

**1960s**

## R&S®XK401 HF transceiver

- ▶ First transistorized transceiver
- ▶ Introduced frequency shift keying (FSK)
- ▶ First HF data modem

**ROHDE & SCHWARZ**

Make ideas real

