

HF Airborne Voice/Data Radio XK516D

Brief description

The Airborne Radio Equipment XK516 is designed for use in commercial aircraft. The system provides conventional voice and high speed data communication air-to-ground, ground-to-air, and air-to-air over long distances. The data communication is suitable for Aircraft Operational Communication (AOC), Airline Administrative Communication (AAC) as well as Air Traffic Communication (ATC).

The radio is a joint development of Rohde & Schwarz and Allied Signal Aerospace.

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The Airborne Radio Equipment consists of two individual units: Voice/Data Transceiver XK516D1, Part No. 964.0452.002 and Antenna Coupler FK516, Part No. 964.0453.001.

If the transceiver is not equipped with data modules, ie it is a voice only transceiver, this unit is assigned a different part number: Voice Transceiver XK516D1, Part No. 964.0452.001.

The data modules which provide the high speed data function are fully integrated within the transceiver. The voice/data radio therefore fits within the space of the conventional HF voice radio. Additional space for the data capability is not needed.

The functioning of the equipment is controlled by the integrated test system, whereby a number of functions



Photo 42226

are continuously monitored. After the test routine has been triggered, the faulty module will be located and indicated. BITE-results are reported to the onboard CFDS/CMC-System via two ARINC 429 busses. Interfaces to the Central Maintenance Systems of

- Airbus
- Boeing
- McDonnell Douglas

are implemented in the radio, thus featuring one part number for nearly all aircraft types.

The HF Airborne Voice/Data Radio XK516D is designed to meet the requirements of

- ARINC 719 (Voice Function)
- ARINC 753 and 635 (Data Function)

The integrated data communication capability meets the specifications of ARINC 753 and 635. By this specification high speed data communication up 1800 bits per second user data rate is provided.

Global HF Data

Communication is possible by strategically located Data Link Groundstations, which provide access to ARINC and SITA Airline networks as well as to Allied Signal Global Data Center.

To provide fully compatibility between existing and new equipment as well as aircraft wiring, three interfaces between Transceiver and Antenna Coupler are simultaneously available:

- Multiwire Serial Interface according (ARINC 753)
- Conventional ARINC 719 Control Lines
- Single Wire Coaxial Interface.

Thus interchangeability of the LRUs with existing voice transceivers and coupler is secured. Further the Single Wire Coaxial Interface needs only the coaxial cable to transfer control and BITE information between transceiver and coupler. Therefore it has a high potential for weight saving. Retrofit in older aircraft is simply performed, because it does not depend on the existing aircraft wiring.



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The Antenna Coupler is a digitally tuned coupler with very low tuning times, typically less than 3 s, when first

tuned on a frequency. The implemented learn mode provides even less tuning time (several 100 ms) after the

coupler has »learned« the antenna. The digital design results in a high reliability coupler.

Specifications

Frequency range	2.0 to 29.9999 MHz
Wide	2.8 to 23.9999 MHz
Narrow	±20 Hz, for -40°C to +55°C ambient temperature
Frequency accuracy	400 W PEP/125 W average, automatic power reduction for mismatch or thermal overloading
Transmitter power	AME/SSB (USB, LSB)
Modes of emission	USB, LSB, AM (E)
Operating modes	Audio input/output for connection of external modems and HF Data Unit for data communication up to 1800 bits/s
Voice	1800 bits/s with integrated data modem and processor
External data	BIT according to ARINC 604, and ABD 0018, Issue C and ABD 0048 and BOEING D22OUO50, Issue C according to ARINC 714
Internal high speed data	Airbus, Boeing, McDonnell Douglas
Test	
SELCAL	
Interfaces for CMC for aircraft of	

Ordering information

Voice/Data Transceiver	XK516D1	964.0452.002
Antenna Coupler	FK516	964.0453.001

If the transceiver is not equipped with data modules, ie it is a voice only transceiver, this unit is assigned a different part number:

Voice Transceiver	XK516	964.0452.001
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Rugged HF Transceiver XK2100T

XK2100T is the rugged version of XK2100 (see page 31). Its sturdy housing gives high tolerance to shock and vibration as well as extended temperature and humidity range. This makes XK2100T particular suitable for operation under extreme environmental conditions, such as military applications. XK2100T is 100 % compatible with XK2100L, colour is olive-green.



Photo 42095

Ordering information

HF Transceiver	XK2100T	6091.6505.02
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