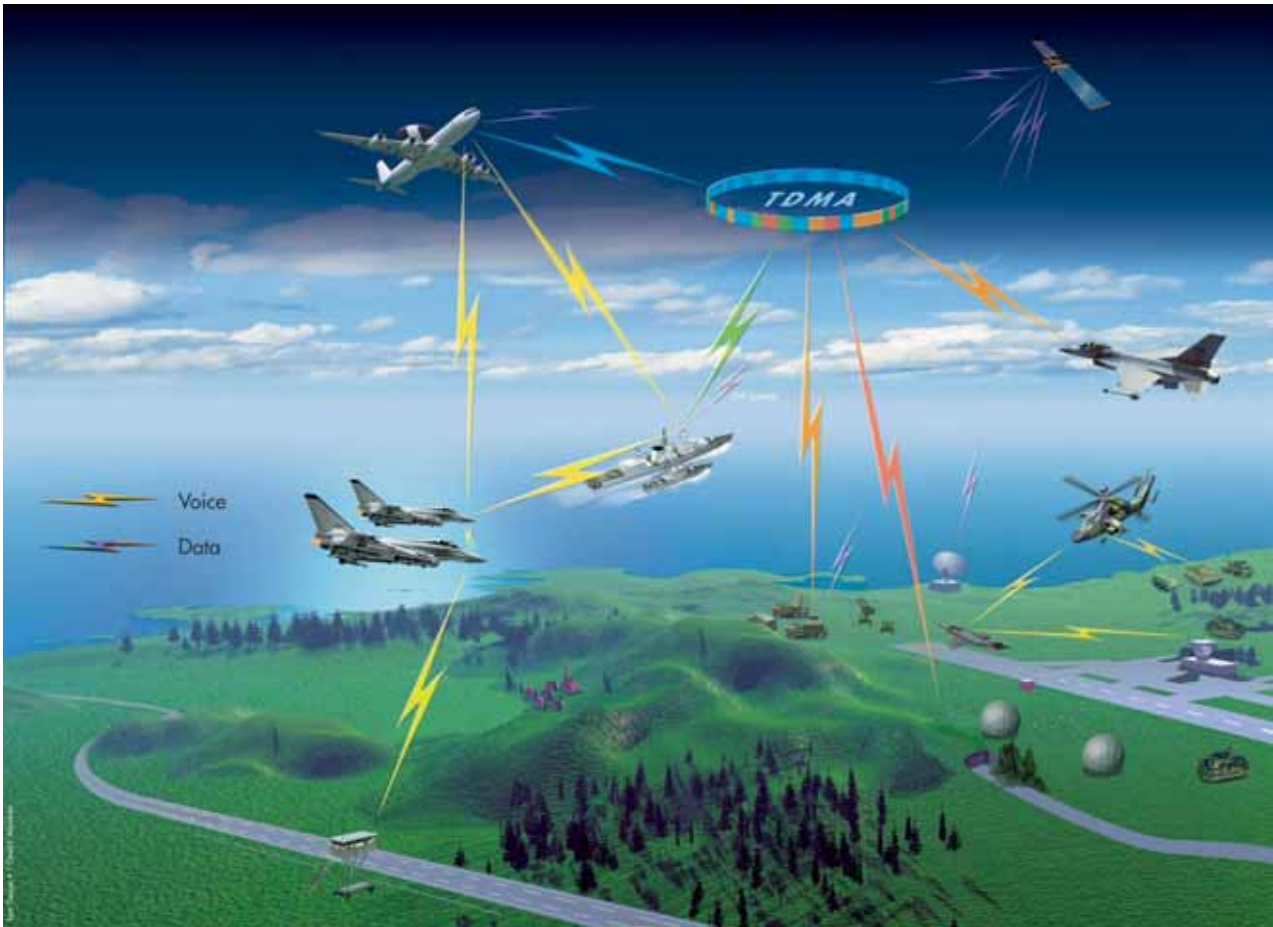




**+M3AR++multiband++multimode++multirole++airborne radio+**

## VHF/UHF Airborne Transceiver Family R&S M3AR





The VHF/UHF Airborne Transceiver Family R&S M3AR for voice and data communication offers all important EPM methods and, thanks to P<sup>3</sup>I philosophy, keeps pace with future development requirements.

### The products at a glance

- ◆ VHF/UHF transceivers for voice and data with EPM capability
  - HAVE QUICK I/II, SATURN, SECOS for cockpit or avionic bay installation
- ◆ Control units

- ◆ Accessories
  - Communication management and handling system
  - Key distribution device
  - Filter
  - Amplifier
  - Base station adapter
  - Support and test equipment
  - Mounting tray

### Brief description

The VHF/UHF Airborne Transceivers R&S M3AR have evolved from decades of experience, especially in the design and development of airborne radio equipment and ECM-resistant radio transmission techniques.

The R&S M3AR multiband, multimode, multirole communication system is designed to provide multimode UHF and VHF, AM and FM, voice and high data communication in normal or EPM (electronic protection measures) mode with embedded COMSEC and TRANSEC.

The R&S M3AR transceivers are software radios with preplanned product improvement (P<sup>3</sup>I) features, which allow upgrading to new developments in the EPM scenario simply by loading software.

The VHF/UHF Airborne Transceivers R&S M3AR are capable of establishing two-way communication links for voice and data for a wide range of fixed- and rotary-wing aircraft.

## Multitude of platforms

Rohde&Schwarz airborne radios support armed services worldwide on a multitude of airborne platforms including F-16, F-5, SAAB Gripen, C-130, Phantom F4 and recently the TIGER and NH90 helicopters.

## Retrofit

Retrofit kits are available for replacing practically any type of existing AN/ARC aircraft radio equipment. The compact design of the R&S M3AR as well as the serial or parallel interface between control unit and transceiver make the integration into existing and new platforms easy. The versatility of the control units also adds to the high flexibility.

## EPM – custom-tailored to armed forces requirements

The new tasks of NATO and those of the national armed forces belonging to NATO, too, call for highest security and interoperability in the field of communications.

The fast frequency hopping method SATURN and the compatibility with the former HAVE QUICK I/II system both defined in the relevant STANAGs ensure security as well as interoperability. On the way to battlefield digitization not only digitized voice but also data transmission, which plays an increasing role, will support standardized link requirements.

Countries not or not yet being members of NATO have similar security requirements. For those countries, Rohde& Schwarz has developed the digital frequency hopping method SECOS, which can be implemented together with the HAVE QUICK I/II mode in order to achieve interoperability with NATO in joint missions and to have a sovereign national waveform available in parallel. The Airborne Transceivers R&S M3AR, for example, give you the option of switching between SECOS and HAVE QUICK I/II waveforms whenever required.

All EPM methods as well as compatibility with future methods due to P<sup>3</sup>I (pre-planned product improvement) have now been implemented in the compact R&S M3AR multiband, multimode, multirole software radios.

With the R&S M3AR, R&S Series400, VHF/UHF Communication Systems R&S M3SR and Software Radio R&S M3TR, Rohde& Schwarz provides an allround air-to-ground EPM communication system that is ideal for future digital battlefield scenarios.

## Modular design and minimum maintenance

The individual modules of the VHF/UHF Transceivers R&S M3AR have defined interfaces. They can be replaced without any adjustment or alignment and thus ensure fast and economical maintenance. Other benefits are:

- ◆ Excellent accessibility
- ◆ Replacement without adjustment
- ◆ Standardized components
- ◆ Minimum number of tools required
- ◆ Minimum-scheduled maintenance





## R&S MR6000L/R&S MR6000R

The Transceivers R&S MR6000L and R&S MR6000R from the R&S M3AR family are of extremely compact design.

These two versions are available for installation in the cockpit or avionics bay. With an output power of 10 W (AM) and 15 W (FM), they cover the frequency range from 30 MHz to 400 MHz.

The R&S MR6000L and R&S MR6000R transceivers are also available with MIL-BUS interface for integration into airborne platforms that provide MIL-BUS control systems.



**R&S MR6000L cockpit version**

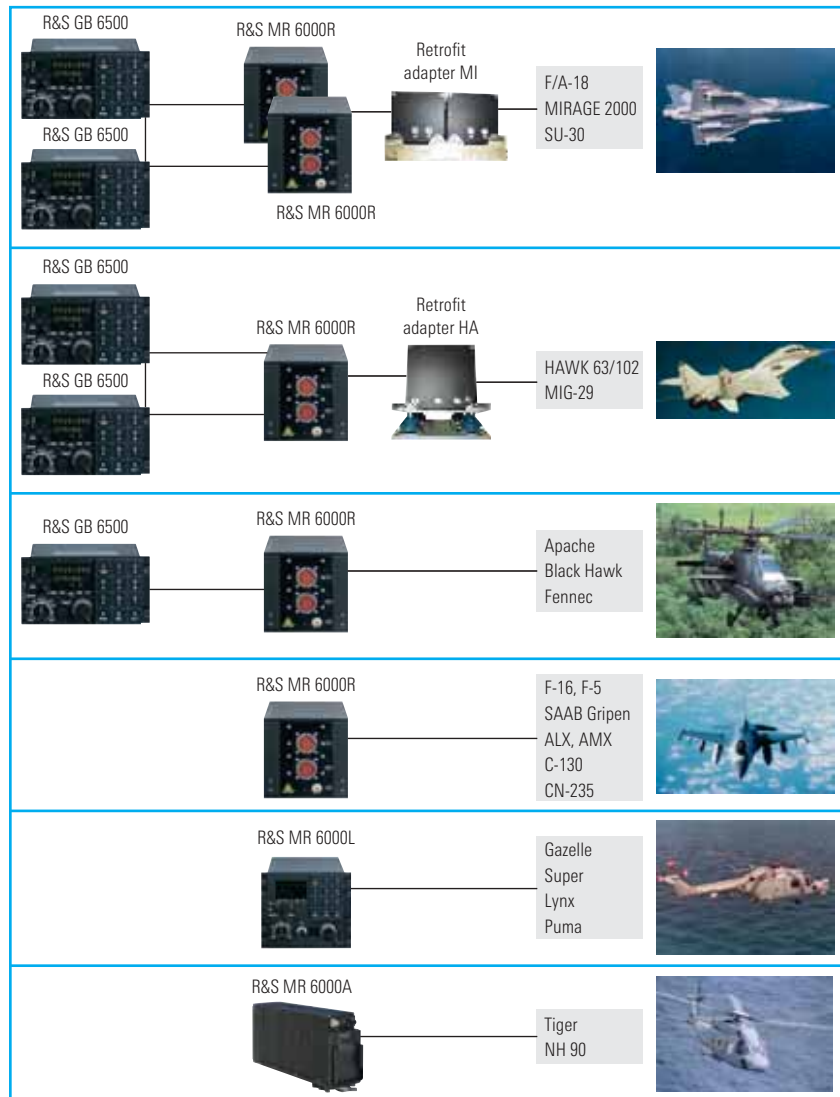


**R&S MR6000R remote-control version with Remote Control Unit R&S GB6500**



**R&S MR6000L rear view of MIL-BUS version**

The R&S MR6000L and R&S MR6000R units are suitable for outfitting many new airborne platforms. They are also ideal for F<sup>3</sup> retrofitting (form, fit, function) to replace AN/ARC164 radios with or without adapters.



**Platform Integration (Examples)**

## R&S MR 6000A

The R&S MR 6000A is the somewhat larger member of the R&S M3AR family and accommodated in a standard housing to ARINC 600. This high-end unit from the R&S M3AR family provides a large number of additional features such as embedded NATO-COMSEC and black key loading, as well as a higher output power of 20 W (AM) and 30 W (FM).



*VHF/UHF Transceiver R&S MR 6000A*



For error diagnosis at the various maintenance levels, a manually controlled flight-line tester or an automatic maintenance test station can be used.



*Maintenance Test Station R&S TS6001*

## Conclusion

Thanks to their modular concept, the VHF/UHF Airborne Transceivers of the R&S M3AR family, which are available in different versions, can be individually configured to meet the specific requirements. A variety of system components such as remote-control unit, filter, amplifier and maintenance tester round off the product range.



**ROHDE & SCHWARZ**

ROHDE & SCHWARZ GmbH & Co. KG · Mühlendorfstraße 15 · 81671 München · Germany · P.O.B. 801469 · 81614 München, Germany  
Telephone +49 89 4129-0 · Fax +49 89 4129-11866 · e-mail: mil-comms@rsd.rohde-schwarz.com · www.rohde-schwarz.com