



8150 RF **AIRANALYZER**

Digital protocol analyzer
for TETRA radio systems



www.air-analyzer.com

8150 RF AIRANALYZER

The RF AirAnalyzer is a versatile measuring device for extensive analysis of TETRA radio systems. It logs system data on the air interface and is optimally suited for mobile use due to its robust design. A laptop with the appropriate software licences is simply connected to the measuring device via an Ethernet connection. Users can obtain detailed results quickly and easily thanks to a wide range of functions. The measurement data is processed and visualised directly. The user-friendly software design and the wide range of search and filter methods allow users to work effectively.



Wide range of applications

- **Quality analysis of the air interface and services**
- **Analyzing voice communication and quality**
- **Performing interoperability checks**
- **Ensuring critical communication through resource monitoring**
- **Locating carrier and interference problems**
- **Investigating problems with the introduction of new system technologies**
- **Radio coverage measurements**
- **Analyzing / maintaining a PMR network**
- **Checking safety features**

THE TECHNOLOGY AT A GLANCE

The 8150 RF AirAnalyzer receives data from the air interface of the network being analyzed. Regardless of the radio system manufacturer, the analysis always delivers highly accurate results.

The highly sensitive receivers make it possible to analyze the complete uplinks and downlinks of several carriers simultaneously. The received data is decoded in real time and transferred to a computer for storage.

Using various evaluation software, the data can be analyzed in more detail at the same time or at a later

time without a direct connection to the measuring device. The 8150 RF AirAnalyzer supports the analysis of all important layers defined by the protocol.

The software is characterised by a particularly intuitive user interface. Among other things, the views can be customised using various filters. You can also effectively reduce large amounts of data using protocol and participant filters. This enables you to search clearly in the communication logs.

EXTENSIVE ANALYSIS OPTIONS

The recorded data is saved as raw data on the computer's hard drive. The raw data can be analyzed, filtered and displayed to evaluate the protocol.

MESSAGE SEQUENCE CHART (MSC)

The MSC represents the complex communication flow in the signaling between terminal and base station in a user-friendly and detailed way.

VOICE DECODER

To ensure high voice quality, the voice decoder offers a real-time voice quality check. The data can be saved in WAV format for further analysis.

SCANNER

All available carriers with their broadcast parameters are displayed in a selectable frequency range. A clear visualisation shows, among other things, the current channel occupancy, received power or frequency errors. This analysis of the current status of the network is supported both qualitatively and quantitatively.

FLEXIBLE EXPANSION (SELECTION)

In addition to the standard functions, the analysis software can be expanded with a large number of functions.

QUALITY OF SERVICE (QOS)- ANALYZER

Determines the network quality using parameters such as SDS, call setup times, calls in the queue, call priorities and cell utilisation. Expansion option: Displays the utilisation as well as the use of the channels by the current groups or group calls. This enables the user to recognise and rectify resource utilisation at an early stage.

IQ-ANALYZER (PHYSICAL DATA ANALYZER)

Measures all relevant IQ data of a base station (e. g. the spectrum of the carrier, peak, C/I and RMS vector errors as well as the constellation display of the base station).

SCANNER- ANALYZER

Displays neighbourhood relationships of base stations as well as the offline analysis of the scanner results.

Records all carriers in the selected frequency spectrum with automatic error analysis in the neighbour cell relationships.

DIRECT MODE OPTION (DMO)

Unlocks full analysis potential for direct communication between terminals (DMO terminals, repeaters and gateways).

AIRANALYZER COVERAGE TEST SOFTWARE OPTION GEOMAP

Enables the measured values of the signal power and different error rates to be linked with GPS position data of your own site. The terminal positions can also be displayed. The measured values are displayed in real time. The data provides information on the values of signal power, frequency error and best server of several channels in the downlink.

DECRYPTAIR®

DecryptAir® is an optional decryption device which, in conjunction with the 8150 RF AirAnalyzer, enables encrypted radio networks to be analyzed.

DecryptAir® can be used to analyze statically or dynamically encrypted radio communication (air interface encryption). Messages are automatically decrypted in the uplink and downlink for analysis.

Corresponding authentication and encryption algorithms, which are securely saved on the DecryptAir®, are required for this to work.

In addition to the secure storage of the algorithms, DecryptAir® offers the advantage of a simple and fast connection to the analyzing PC thanks to its compact design and USB interface.



SERVICES

In addition to high-performance technology, we offer customised services tailored to your needs. Our service portfolio for the 8150 RF AirAnalyzer includes calibration and maintenance of the devices as well as an extended warranty.

This ensures optimum performance and availability of your device at low, calculable operating costs. Thanks to

our comprehensive range of services, you benefit from guaranteed usability and a longer product service life. We also offer specialised training courses on the subject of wireless network analysis. The content is designed for both beginners and specialists. If required, we will be happy to develop special seminars customised to your needs. These can also be held conveniently at your company on request.

TECHNICAL SPECIFICATIONS

GENERAL

Housing	19-inch, 3 U
Temperature range	0 °C to +50 °C
Power supply	100 V - 240 V AC, 47 - 63 Hz
Power consumption	< 60 W
Other connections	Ethernet, USB, RS232, digital I/O
Weight approx.	5.3 kg

RECEIVERS

Number of RF receivers	2
Frequency range	100 MHz - 1,000 MHz
Max. input power	30 dBm (High Power Path)
Connection	2 N sockets
Bandwidth	10 MHz (each receiver)
Supported TETRA frequency ranges	all
Number of channel frequencies within a 10 MHz downlink band	all

SENSITIVITY

RSSI measurement	-124 dBm
BER in user data	100 to 500 MHz: typically -120 dBm 100 to 500 MHz: < -118 dBm 500 to 950 MHz: typically -117 dBm 500 to 950 MHz: < -115 dBm
FDR (Intermodulation-Free Dynamic Range)	-75 dBc
Dynamic range	> 80 dB

DecryptAir®

Dimensions (W x H x D)	62 mm x 32 mm x 90 mm
Weight	< 120 g
Interface	USB 2.0 connector type B



info@hmf-germany.com



hmf-smart-solutions.com



+49 (0) 5042 998 0

HMF Smart Solutions CmbH
Fritz-Hähne-Str. 7, 31848 Bad Münder - Germany



HMF Smart Solutions CmbH reserves the right to modify the product design and the specifications. In case of a printing error, HMF Smart Solutions CmbH does not accept any liability. All specifications are subject to change without notice. Encryption features are optional and have to be configured separately; they are also subject to German and European export regulations. **Hytera** are registered trademarks of Hytera Co. Ltd. ACCESSNET® and all derivatives are protected trademarks of HMF Smart Solutions CmbH. © 2024 HMF Smart Solutions CmbH. All rights reserved.