

Radiocommunication Analyzers CMTA54, CMTA84

100 kHz to 1 GHz

High-tech radiocommunication test equipment in one single unit

Brief description

Radiocommunication Analyzers CMTA54 and CMTA84 are universal, top-quality testers equipped with all the necessary signal sources and measuring facilities for complete testing of all types of analog radio equipment.

The versatile, independent and high-precision signal sources and measuring facilities make the CMTA particularly suitable for laboratory applications.

Two models are available for different types of application

- **CMTA54:** basic model with spectrum analyzer and storage oscilloscope
- **CMTA84:** same as CMTA54 + all cellular-radio simulators

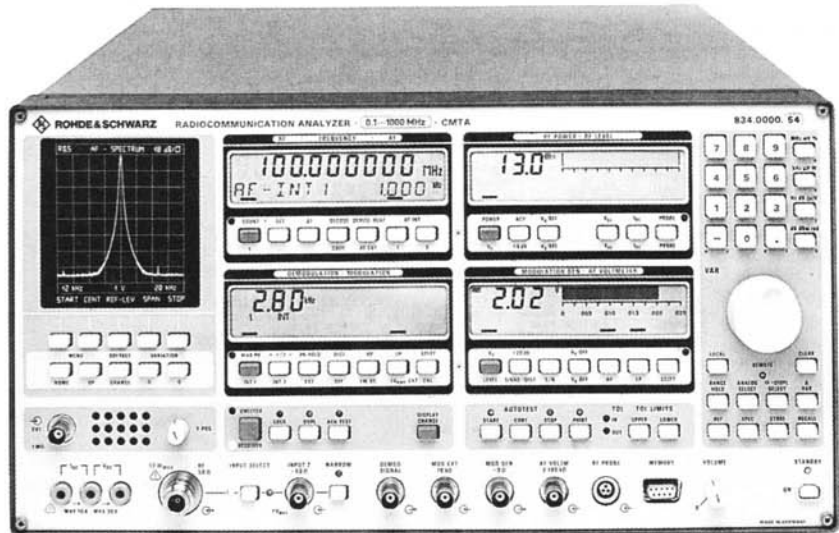


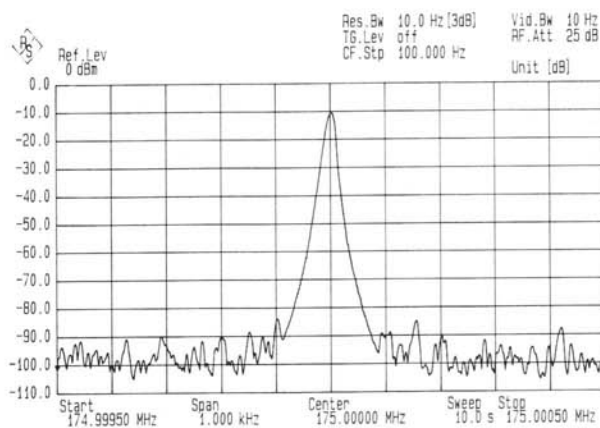
Photo 37323

Main features

- Wide frequency ranges, high measurement rates and large dynamic range of all measuring facilities
- Numerous additional facilities such as programmable highpass, lowpass, bandpass and notch filters or continuously tunable distortion/SINAD meter
- RF synthesizer featuring high spectral purity, fine frequency resolution and universal modulation capabilities

Operation

- Automatic test routines
- Complete device setups
- Program memory for automatic test sequences without external process controller
- IEC/IEEE-bus interface
- Printer connector for data logging or program listings
- Transfer memory for transferring automatic test routines to CMTA testers
- Relay matrix



CMTA RF synthesizer spectrum; extremely high spectral purity over the entire frequency range and excellent stability make the RF synthesizer of the CMTA suitable for all - even extremely narrow-band - DUTs

Standard equipment of CMTA54

Designation	Uses, characteristics
RF synthesizer	<ul style="list-style-type: none"> - Frequency range 0.1 to 1000 MHz, resolution 1 Hz, $P_{max} = 16$ dBm - OCXO reference oscillator with little aging and high frequency accuracy - High spectral purity - AM, FM and ϕM by one or two internal modulation generators and/or by external modulation (multiple modulation, multi-tone modulation; separate adjustment) - FM-DC coupled modulation up to ± 100 kHz deviation - Very short frequency settling - Wide dynamic range with extremely high level resolution - Uninterrupted level adjustment over 20 dB
RF synthesizer (encoder functions)	<p>Two independent AF synthesizers as modulation sources for the built-in RF synthesizer or for the DUT</p> <ul style="list-style-type: none"> - Frequency range from 20 Hz to 30 kHz, crystal accurate with high frequency resolution - Dynamic level range from 10 μV to 5 V, with high resolution and excellent S/N ratio (even at low levels) - Eight presettable fixed frequencies - Selective-call sequence and two-tone sequence generation (eg DTMF) with standard or programmable frequencies
Decoder functions	<p>Fast testing of encoders for correct codes and observance of frequency tolerances</p> <ul style="list-style-type: none"> - Single-tone demodulation to standard frequencies or programmable - DTMF decoder
RF power meter	<ul style="list-style-type: none"> - Broadband and wide dynamic range - Dynamic measurement range can be extended as desired by using input attenuation
RF frequency counter	<ul style="list-style-type: none"> - Frequency counter operating independently of RF synthesizer - Resolution 1 or 10 Hz - Two test inputs with a total dynamic level range of 80 dB - RF frequency offset measurement
AF frequency counter	<ul style="list-style-type: none"> - Wide frequency range - Two operating modes: period meter and gating-time counter
Demodulators	<p>For AM, FM or ϕM measurements</p> <ul style="list-style-type: none"> - Automatic setting to the carrier frequency to be demodulated or presettable - Measurement functions: +PK, -PK, \pmPK/2, PK Hold, RMS - Low inherent modulation
Distortion/SINAD meter	<ul style="list-style-type: none"> - User-programmable test frequencies in fine steps (100 Hz to 5 kHz)
S/N meter	<p>Determines the S/N ratio at the AF output of the radio equipment by switching the modulation cyclically on and off. Received pilot tones may be excluded from the switching procedure.</p>
AF voltmeter	<ul style="list-style-type: none"> - Wide dynamic level range - Choice of different weighting filters and time constants
DC voltmeter and DC ammeter	<p>Wide dynamic measurement range for checking the power supply and determining the power consumption of the radio equipment; high common-mode rejection and favourable impedance characteristics</p>
IEC/IEEE-bus with relay matrix	<p>Fully automatic measurements through remote-control of analyzer and DUT control by means of relays integrated in the CMTA</p>