

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

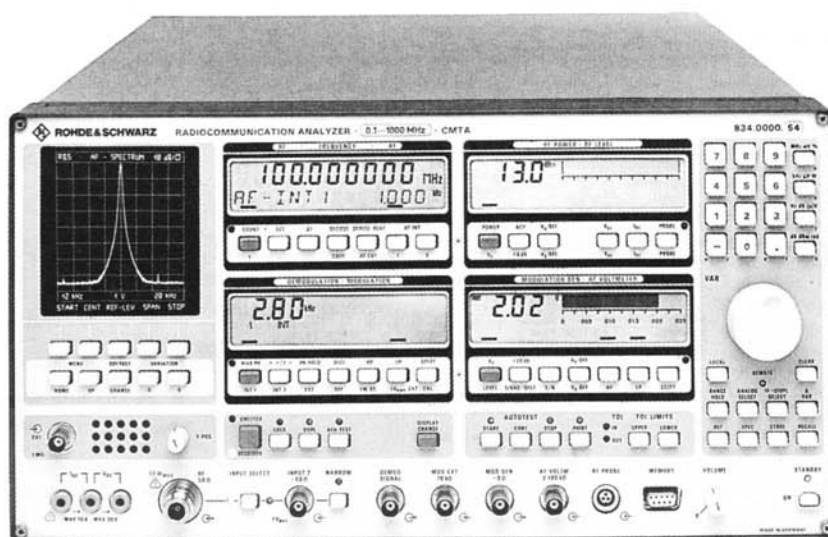


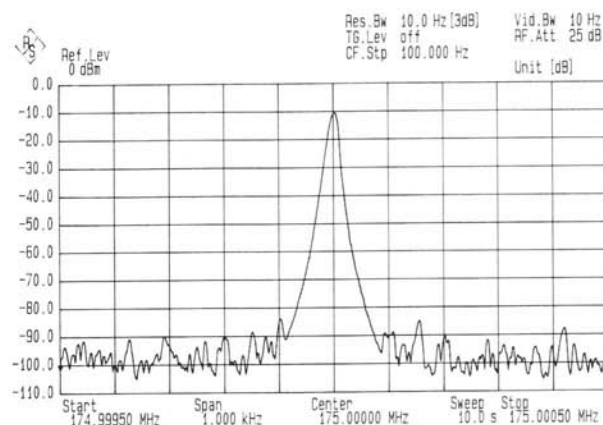
Photo 37323

Main features

- Wide frequency ranges, high measurement rates and large dynamic range of all measuring facilities
- Numerous additional facilities such as programmable highpass, low-pass, 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	- 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)	Two independent AF synthesizers as modulation sources for the built-in RF synthesizer or for the DUT - 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	Fast testing of encoders for correct codes and observance of frequency tolerances - Single-tone demodulation to standard frequencies or programmable - DTMF decoder
RF power meter	- Broadband and wide dynamic range - Dynamic measurement range can be extended as desired by using input attenuation
RF frequency counter	- 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	- Wide frequency range - Two operating modes: period meter and gating-time counter
Demodulators	For AM, FM or ϕM measurements - Automatic setting to the carrier frequency to be demodulated or presettable - Measurement functions: +PK, -PK, $\pm PK/2$, PK Hold, RMS - Low inherent modulation
Distortion/SINAD meter	- User-programmable test frequencies in fine steps (100 Hz to 5 kHz)
S/N meter	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.
AF voltmeter	- Wide dynamic level range - Choice of different weighting filters and time constants
DC voltmeter and DC ammeter	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
IEC/IEEE-bus with relay matrix	Fully automatic measurements through remote-control of analyzer and DUT control by means of relays integrated in the CMTA