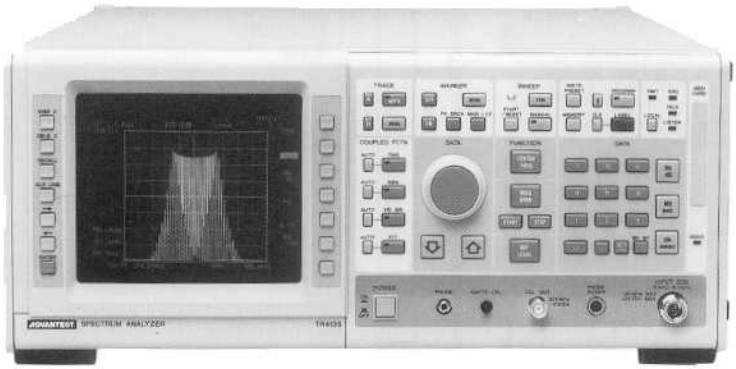
Affordable, High-Stability 3.6-GHz Spectrum Analyzer



TR4135 Spectrum Analyzer

- **Wide band coverage: 10 kHz to 3.6 GHz**
- **Wide input level range: −131 to +20 dBm**
- **High-precision frequency measurement to 30-Hz resolution**
- **High-Q device frequency measurements in combination with the TR4154 Tracking Generator**
- **3-Decade log sweep**
- **Direct reading of field strength and quasipeak-value measurements conforming CISPR standards**
- **GPIB provided as standard for full remote operation**

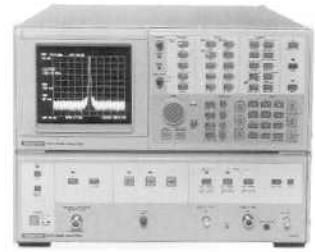
The TR4135 Spectrum Analyzer uses a synthesized local oscillator to enable high-stability spectrum analysis. It features frequency coverage from 10 kHz to 3.6 GHz, input range of −131 to +20 dBm, a maximum resolution of 30 Hz, residual FM of 30 Hzp-p and skirt noise characteristics of −105 dBc/Hz at 20 kHz from the carrier. The TR4135 is suitable for measurements on 900-MHz mobile radiotelephone equipment, fixed broadcast stations and mobile A-band equipment. It can be used for satellite broadcast received field-strength measurements and in the evaluation and testing of CATV equipment. It enables high-precision frequency measurements and directly readable field strength measurements by means of antenna calibration and is further capable of quasipeak-value measurements conforming to CISPR standards. Completely independent digital memories for two channels enable storage of two displays each and a versatile complement of marker functions is provided to increase measurement speed.
GPIB is provided to enable full remote control and the use of a synthesized local oscillator ensures accurate frequency setting, making the TR4135 usable as a spectrum analyzer for automated measuring systems.

(Specifications)

Frequency
Frequency range: 10 kHz to 3.6 GHz
Noise sidebands:

85 dBc/Hz	100 dBc/Hz	105 dBc/Hz
1-kHz offset	10-kHz offset	20-kHz offset

Stability:
Frequency drift 500 Hz/min, span ≦ 2 MHz
Residual FM 30 Hzp-p max, span ≦ 2 MHz
Resolution:
3-dB bandwidth 30 Hz to 1 MHz
6-dB bandwidth 200 Hz, 9 kHz, 120 kHz
Amplitude
Measurement range: −131 dBm to +20 dBm
Dynamic range:
Average noise level
−116 dBm +1.55 f (GHz) dB max. (at 1-kHz resolution bandwidth)
2nd and 3rd order distortion −70 dB max. (−30-dBm input level, at 10 MHz or greater)
Residual response −100 dBm max. (at 100 kHz or greater)
Sweep
Sweep time: 50 ms to 1000 s
Trigger modes: Free-run, line, video, external, single, TV-V
Input
Maximum input level: +20 dBm (at 20-dB input attenuation or greater)
±25 VDC max.
Options
Option 04 Occupied bandwidth Measurement
Option 06 Memory card



TR4171 Spectrum Analyzer

- **10 Hz to 120 MHz with resolution to 3 Hz**
- **High input sensitivity: −150 dBm**
- **Amplitude characteristics, phase and group delay characteristic measurements**
- **Quasipeak-value measurements, occupied bandwidth measurement, adjacent-channel leakage power measurements, Smith chart display impedance measurements and gated sweep (optional)**

The TR4171 is a spectrum analyzer capable of phase and group delay measurements over the range 10 Hz to 120 MHz. It uses a built-in processor to perform spectrum analysis with an input sensitivity of −150 dBm and a maximum resolution of 3 Hz. Its high-purity local oscillator enables high C/N measurements and a gated sweep function ensures high-accuracy spectrum analysis of burst signals.

(Specifications)

Measurement range: 10 Hz to 120 MHz
Noise sidebands: −125 dBc/Hz (min value at 20 kHz from the carrier)
Stability (frequency span ≦ 5.0 kHz):
Drift 1 Hz/min max., 10 Hz/30 minutes max.
Residual FM 0.2 Hzp-p/s max.
Resolution:
3-dB bandwidth 3 Hz to 100 kHz in 1-3 sequence steps
Amplitude
Measurement range: −150 dBm to +30 dBm
Average noise level: −140 dBm max. (3-Hz bandwidth resolution, 1-Hz video bandwidth, 0-dBm input attenuation)
−155 dBm in 50 Ω and 75 Ω high-sensitivity mode with 3-Hz bandwidth resolution, 1-Hz video bandwidth and 0-dBm input attenuation
Sweep
Sweep time: 50 ms to 1000 s per sweep (10 div)
100 μs to 1000 s for zero span
Input
Maximum input level: +30 dBm (1 Watt)
±15 VDC, at 50 Ω or 75 Ω inputs