Spectrum Analyzer AT5010/5011/5000

AT5010

- **Frequency Range:** 0.15MHz to 1050MHz
- **4½ Digit Display** *(Center & Marker Frequency, 0.1MHz resolution)*
- **-100 to +13dBm Amplitude Range,** 20KHz, 400KHz and Video-Filter
- **Tracking-Generator** *(AT5011 only)*
- **Frequency range:** 0.15MHz to 1050MHz
- **Output Voltage:** +1dBm to to 50dBm*(50 Ω)*
- **Accessories:** Users Manual, Power Cord 1pcs

Evolution of the original AT5005/AT5006 has led to the new AT5010/5011 Spectrum Analyzer/Tracking Generator which now extends operation over 1GHz *(frequency range 0.15 to 1050MHz)*. Both fine and coarse center frequency controls, combined with a scan width selector provide simple frequency domain measurements from 100KHz/Div. To 100 MHz/Div. Both models include a 4½ digit numeric LED readout that can selectively display either the center or marker frequency. The At5011 includes a tracking generator. The AT5010/5011 offer the same operation modes as the AT5005/5006. The instruments are suitable for pre-compliance testing during develop. prior to third party testing. A near-field sniffer probe set, AZ530, can be used to locate cable and PC board emission "hot spots" and evaluate EMC problems at the breadboard and prototype level. The combination of AT5010/5011 with the AZ530 is an excellent solution for RF leakage/radiation detection, CATV/MATV system troubleshooting,cellular telephone/pocket pager test, and EMC diagnostics. There is an optional measurement output for a PC which makes documentation of results easy and affordable with the AO500 Interface.

Applications

- AT spectrum analyzer can carry out good inspection to the faults of cable system and wireless system including remote control, cordless phone, cable TV and communication equipment, as well as good comparison and analysis to frequency of signals.
- AT5010 spectrum analyzer can test mobile phone, RF circuits, for example, control signal of logic circuit, baseband signal; local oscillator signal of RF circuit, IF signal and transmission signal, It is very quick and accurate to use AT5010 spectrum analyzer to overhaul the fault of mobile phone which can not enter the network, and determine the fault point.
- Electromagnetic Compatible (EMC) Testing: measure the function of harmful electromagnetic wave to be transmitted by various electronic equipments. In addition, it can output AM/FM demodulation signal from socket PHONE, identify the broadcast signal affected by noise. From authorization aspect, it is very effective measurement function for the evaluation and research in advance to carry out the measurement of radioactive noise.
- Widely used for production, development, education and scientific research. True form of signal (such as RF pulse signal) can be observed from ATTEN spectrum analyzer clearly, where figures are expanded by Fourier series, good for apprehend in education and research.

Specifications

- **Frequency range:** 0.15MHz to 1050MHz
- **Center frequency display accuracy:** ±100KHz
- **Marker accuracy:** ±*(0.1% span+100KHz)*
- **Frequency display res.:** 100KHz *(4½ digit LED)*
- **Frequency scan width accuracy:** ±10%
- **Frequency stability:** better than 150KHz/hour
- **Resolution:** 400KHz and 20KHz
- **Video-Filter on:** 4KHz
- **Sweep rate:** 43Hz
- **Amplitude range:** -100dBm to +13dBm
- **Screen display range:** 80dB *(10dB/div)*
- **Reference level:** -27dBm to +13dBm *(in 10dB steps)*
- **Reference level accuracy:** ±2dB
- **Average noise level:** -99dBm *(20KHz BW)*
- **Distortion:** < -55dBc: 2nd and 3rd harmonic 3rd order intermod: -70dBc

(two signals >3MHz apart)

- **Sensitivity:** Better than -90dBm
- **Log scale fidelity:** ±2dB*(without attn.)* Ref: 250MHz
- **Input attenuator:** 0 to 40dB (4×10dB steps)
- **Input attenuator accuracy:** ±1dB/10dB step
- **Max. input level:** +10dBm, ±25VDC *(0dB attenuation)* +20dBm *(40dB attenuation)*
- **Frequency scan width:** 100KHz/div. to 100MHz /div.in 1-2-5 steps and 0Hz/div. *(Zero Scan)*

Tracking Generator

- **Output Frequency:** 0.15 MHz to 1050 MHz
- **Output attenuator:** 0 to 40dB *(4×10dB steps)*
- **Output attenuator accuracy:** ±1dB
- **Frequency response:** ±1.5dB
- **Output impedance:** 50Ω *(BNC)*
- **Radio Frequency Interference(RFI):** <20dBc
- **Output level range:** -50dBm to +1dBm *(in 10dB steps and var.)*

General Specifications

- **Display:** 6 inch, 8×10 division graticule
- **Trace rotation:** adjustment from front panel
- **Power:** 220V ± 10%, 50Hz to 60Hz
- **Power consumption:** approx. 20W
- **Operation Ambient:** 0℃ to +40℃
- **Safety:** Grade I (IEC 1010-1)
- **Weight:** approx. 7kg
- **Dimensions:** 380×285×125 (L×W×H) mm
- **Input impedance:** 50Ω
- **Socket:** BNC
- **Load resistance:** > 8Ω
- **AM/FM demodulation output**

Near Field Sniffer Probes AZ530 (Optional)

The AZ530 is the ideal toolkit for the investigation of RF electromagnetic fields. Lt is indispensable of EMI pre-compliance testing during product development, prior to third party testing. The set includes 3 hand-held probes with a built-in pre-amplifier covering the frequency range from 100KHz to over 1000MHz.

The probes-ove magnetic field probe, one electric field probe, and one high impedance probe are all matched to the 50Ω inputs of Spectrum analyzers or RF-receivers. The power can be supplied either from batteries, Ni-Cads or through a power cord directly connected to an AT5010/AT5011 series spectrum analyzer.

Signal feedis via a 1.5m BNC-cable. When used in conjuction with a spectrum analyzer or measuring receiver, the probes canbe used to locate and qualify EMI sources, as well as evaluate EMC problems at the breadboard and prototype level. They enable the user to evaluate radiated fields and perform shield effectiveness comparisons. Mechanical screening performance and immunity tests on cables and components are easily performed.

Specifications

- **Frequency range:** 0.1MHz to 1000MHz *(lower frequency limit depends on probe type)*
- **Output impedance:** 50Ω
- **Output connector:** BNC
- **Input capacitance:** 2pF *(high imped Probe)*
- **Max. Input Level:** +10dBm *(without destruction)*
- **1dB-compression point:** -2dBm *(frequency range dependent)*
- **DC-input voltage:** 20V max
- **Supply Voltage:** 6V DC, 4AA size batteries, Supply-power of Analyzer
- **Supply Current:** 8mA *(H-Field Probe),* 5mA *(E-Fieldprobe),* 24mA *(High imp probe)*
- **Probe Dimensions:** 195×40×19 (L×W×H)mm
- **Housing:** Plastic *(electrically shielded internally)*

The H-Field Near-Field probe

The H-Field probe provides a voltage to the connected measurement system which is proportionalto the magnetic radio frequency (RF) field strength existing at the probe location, With this probe, circuit RF sources may be localized in close proximity of each other.

AZ530-M

The H-Field will decrease as the cube of the distance from the source, A doubling of the distance will reduce the H-field by a factor of eight ($H=1/d^3$). where d is the distance.

In the actual use of the H-field sensor one observes therefore a rapid increase of the probe's output voltage as the interference source is approached. While investigating a circuit board, the sources are