Audio Analyzing DMM

Keithley Instruments, Inc. today announced its new Model 2015-P Audio Analyzing DMM. The Model 2015-P provides a unique, highly cost-effective solution to audio quality testing in telecommunication applications. While other instruments exist that can be adapted to this purpose, they are typically general-purpose instruments that are larger, slower, more expensive, and more complex to operate. The Model 2015-P, along with companion Models 2015 and 2016, are aimed specifically at production applications that demand rapid, automated testing, especially in the 300-4000 Hz spectrum where human voice frequencies are found. The Model 2015-P is housed in a single half-rack package, making it extremely space efficient in crowded test racks. Moreover, Keithley's new audio test solutions are the only instruments of their type, providing the lowest-cost THD test capabilities available. The Model 2015-P's internal computational capabilities enable it to characterize an acquired signal spectrum without the need for a computer, data transfer, or separate analysis software. The Model 2015-P can report the frequency and amplitude of the highest value in a complete spectrum, or within a specified frequency band. It can also identify additional peaks in descending order of magnitude. Once a peak frequency component is identified, the Model 2015-P can identify the magnitude and frequency of maximum components above and below the peak value. If desired, the 2015-P can also report the magnitude of a specified set of frequency components, or even determine the difference in amplitude between two spectral components.

The Model 2015-P combines a full-function 6 -digit DMM with audio measurement capability, including Total Harmonic Distortion (THD), THD Noise, Signal-to-Noise plus Distortion (SINAD), and frequency spectrum analysis. With its combined audio source, test, and DMM features, the Model 2015-P provides one of the most cost-effective methods available for making both frequency domain and time domain measurements. The instrument includes five audio shaping filters (CCITT weighting, C-message, A-weighting, CCIR and CCIR/ARM), plus separate selectable high-pass and low-pass filters that can be combined to form a bandpass filter for narrowband analysis. It also offers a dual-output 20Hz(20kHz sine wave generator for generating fundamental stimulus signals. The second output provides the inverse of the first output, which allows for testing differential input circuits for common mode or noise cancellation performance. Alternatively, the second output can be a pulse train used for pulse synchronization of other instruments with the Model 2015-P's source output.

The Model 2015-P DMM section is based on Keithley's high-speed, low-noise analog-to-digital converter technology. It provides 13 functions, including standard AC and DC voltage and current, True RMS voltage and current, 2-wire and 4-wire ohms, temperature, frequency, period, dB, dBm, diode testing and continuity testing. The DMM features traditional Keithley sensitivity and accuracy, with DCV from 100nV to 1000V (0.002% 90-day basic accuracy), and DC ohms from 100 &#956Ω to 100M Ω (0.008% 90-day basic accuracy). High-speed autoranging (&lt 30 msec) and fast range changes (50/sec) provide exceptional measurement speed at any resolution. At 6 digits, the Model 2015-P delivers 50 triggered readings/sec over the IEEE-488

bus. At 4 digits, the Model 2015-P can read up to 2000 readings/sec into its internal 1024 sample buffer, making it an excellent choice for applications where throughput is critical.
Built-in IEEE-488 and RS-232 interfaces enable the Model 2015(P to be connected to a PC in order to acquire, store, process and display results automatically. TestPoint&reg Instrument Driver Libraries and run-time programs are available to simplify IEEE-488.2 and RS-232 program generation. A LabVIEW library is also available.

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