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Nota di contenuto	Introduction -- History of Oscilloscopes/ Fourier's mathematical transformation -- Semiconductors inside the oscilloscope and as objects of inquiry -- Bench-top vs. hand-held, battery-operated instruments, and use of the differential probe -- The math function in oscilloscopes -- Oscilloscope memory depth and sampling rate problems -- Using cursors to measure the value of a function -- Oscilloscope troubleshooting techniques -- Networking oscilloscopes with each other and with local and remote computers -- The PC-based oscilloscopes -- Triggered-sweep digital storage oscilloscope block diagram -- What lies ahead – In a nutshell, Artificial Intelligence.
Sommario/riassunto	This text presents readers with an engaging while rigorous manual on the use of oscilloscopes in laboratory and field settings. It describes procedures for measuring and displaying waveforms, gives examples of how this information can be used for repairing malfunctioning equipment and developing new designs, and explains steps for debugging pre-production prototypes. The book begins by examining how the oscilloscope displays electrical energy as traces on X and Y co-ordinates, freely transitioning without loss of information between time and frequency domains, in accordance with the Fourier Transform and its modern correlate, the Fast Fourier Transform. The book continues

with practical applications and case studies, describes how oscilloscopes are used in diagnosing pulse width modulation (PWM) problems--looking at serial data streaming and analyzing power supply noise and premises power quality issues—and emphasizes the great functionality of mixed-signal as opposed to mixed-domain oscilloscope, and earlier instruments. Featuring many descriptions of applications in applied science and physics, Oscilloscopes: A Manual for Students, Engineers, and Scientists is ideal for students, faculty, and practitioners.