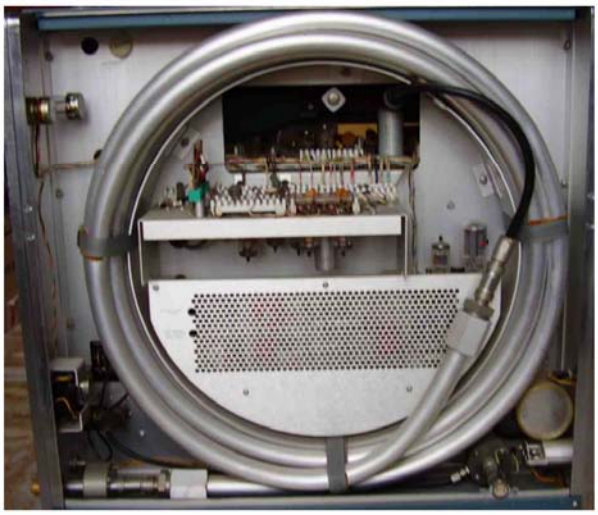
Tektronix - 519



This huge oscilloscope was introduced in the early sixties, with very unique features. Vertical bandwidth from DC to 1000 MHz minimum at 3 dB and risetime less than 0.35 ns were claimed, thanks to its distributed deflection type CRT.

The T519 tube had 27 vertical deflection plate pairs driven through 27 taps from a 125 ohms transmission line. The signal propagated through the vertical deflection system, toward the screen, at the same velocity of the electron beam, so that electrons were successively more and more deflected before striking the screen. The deflection impressed by each plate was additive. The P11 high speed phosphor and the 24 KV accelerating voltage made possible the photographic recording of single-shot events even at the fastest sweep rate, 2 nanoseconds per centimeter. Each tube was individually calibrated and the actual risetime was engraved on the front bezel.

The trigger takeoff was an appreciable example of ingenuity. The outer conductor of the 125 ohms coaxial cable was cut and removed for a short length. Two copper discs were soldered to the two sections of the shield braid. 8 jumpers, each crossing a small

ferrite core, connected the two discs, as in a squirrel cage. The trigger output conductor was wired across the eight cores, to form eight 1:1 transformers. Primary windings were parallel connected and secondaries were in series. The result was a trigger signal large enough to trigger a tunnel diode oscillator, with less than 1.3% attenuation of the input signal.

The 45 ns low-loss vertical delay line, a 1” aluminum tube, occupied most of the right side of the cabinet. Gen-Rad coaxial connectors were used in the vertical section.

CRT: 5-inch round, flat-faced, 24 kV accelerating potential, max x-ray radiation 0.7 millirems per hour, P11 phosphor. 2 x 6 cm display area. Max input signal was ±15V DC or 15 V RMS or ±100 V pulse.

47 tubes, 17 transistors, 51 diodes and 7 neon bulbs. T5191-11 CRT, 6688, 6DJ8, 12HG7, 6AU6, 6CW5/EL86, 12AL5, 4CX250F, 6AF3, 12AU6, 12BY7, 6080, 7734, 6AU5, 1X2B, 5642, 6AQ5. Some tubes might differ with the serial number or the revision level.

Power supply: 110 or 220 VAC, 50 or 60 Hz, 650 W typical

Weight 44 kg.

The collection includes two samples of this model and the instruction manual. One oscilloscope is fully working, the second one is still unchecked.