Tektronix 585A - High-Performance Oscilloscope

Fast risetime oscilloscope mainframe, introduced in 1964 to replace the 585.

This oscilloscope was an improved 585. The mainframe accepted 80 series plug-ins and the tunnel diode trigger circuit was capable of triggering to beyond 150 MHz and to synchronize up to 250 MHz. Sweep rate as fast as 10 ns/cm was possible with 5x magnifier. Two balanced distributed amplifiers were used in the vertical amplifying chain. The first one, using seven 6DJ8/ECC88, before the delay line and the second one, with five more 6DJ8/ECC88, between the line and the deflection plates driver. The CRT itself, type T5810-31, used a vertical distributed deflection, with six deflection plate pairs driven by self-contained transmission lines, the signal propagating toward the front of the tube at the same velocity of the electron beam. Special plug-in units were required, capable of driving and terminating vertical amplifier of the mainframe. The very early plug-in preamplifier was the single channel type 80, followed by the dual-channel type 82. Also the type 81 adapter was available, to accept other standard letter-series plug-ins with reduced bandwidth.

Trigger used a tunnel diode regenerator to operate with input signals as low as 2 mm of vertical deflection. Two time-base generators, the main one ranging from 50 ns/cm to 5 s/cm. A 5-x magnifier increased calibrated range to 10 ns/cm. The time-base B also functioned as delay generator.

The maiframe used some 73 vacuum tubes, 3 transistors, 1 tunnel diode and several silicon rectifiers and neon bulbs.

In the picture above the 585A is shown with the type 82 vertical plug-in.