

ABSTRACT

An electrical signal measurement apparatus 2A includes a signal conversion unit 30 for intensity modulating measurement light based on an electrical signal of a measurement target of a temporal waveform and outputting as an optical signal corresponding to the electrical signal, a waveform measurement unit 40 for measuring a temporal waveform of the optical signal, and a waveform analysis unit 52 for obtaining the temporal waveform of the electrical signal based on a measurement result of the optical signal. The waveform measurement unit 40 includes a streak tube 42 including a photocathode for inputting the optical signal, a sweep electrode, and a phosphor screen, an imaging element 44 for capturing a fluorescence image generated on the phosphor screen and outputting a waveform image, and an input optical system 41 for inputting the optical signal to the photocathode, the waveform analysis unit 52 obtains the temporal waveform of the electrical signal based on the waveform image, and the input optical system 41 inputs the optical signal to the photocathode as a line-shaped optical image extending in a direction intersecting with a sweep direction. Thus, an electrical signal measurement apparatus and a measurement method capable of measuring a temporal waveform of an electrical signal at high speed are realized.

FIG. 3