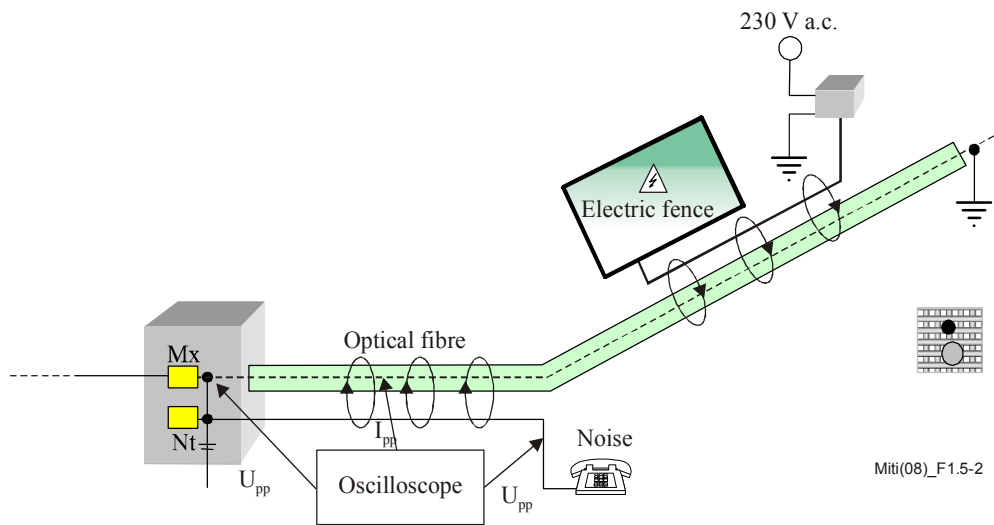


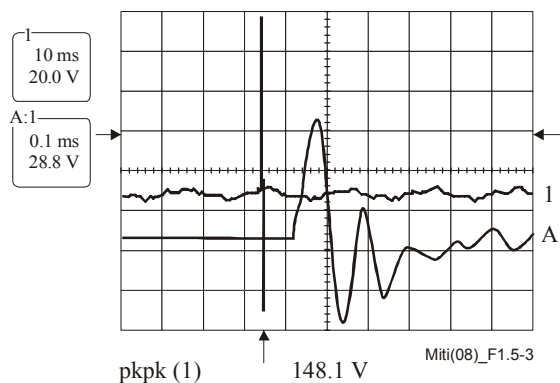
## Measurement/Searching techniques/Experiment

The electric parameters of the line were in line with the requirements. A 148-Vp-p longitudinal voltage line-to-ground at customer installation was measured (Figure 1.5-2). The major frequency of the transients was about 8 kHz and decreased after 2.5 ms (Figure 1.5-3). The transients repeated at 1.3-second intervals. Measurements were also made at the distribution point. On the screen of optical fibre transient, currents with about 27 Ap-p were measured. The peak-to-peak voltage recorded between the earthing conductor of the screen and the ground at the distribution point was 340 Vp-p (Figure 1.5-4). The asymmetrical supplying cable of the electrical fence, which was situated along the route of optical fibre, was identified as the source inducing the transients.

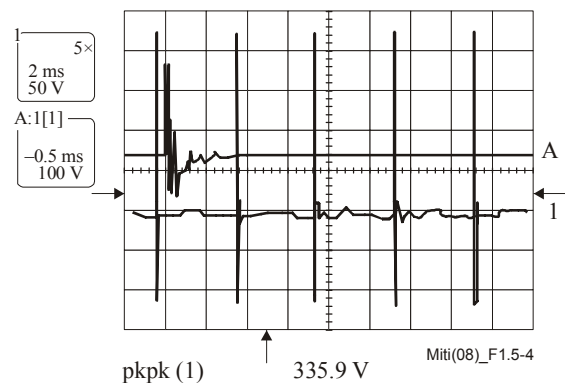
Through the screen that was earthed at both sides (screen resistance  $13.5 \Omega$ ), the optical fibre was the source for the induction into the parallel copper cable. The metallic foil of the 10-pair cable was earthed on only one side, connected to the earth of the distribution point.



**Figure 1.5-2 – Measurement system**



**Figure 1.5-3 – Voltage transient on the copper – cable**



**Figure 1.5-4 – Voltage transient on the screen of the optical fibre**