

JOURNAL OF PLASMA AND FUSION RESEARCH

The Journal of the Japan Society of Plasma Science and Nuclear Fusion Research

Vol. 84, No.6, June 2008

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Time-of-flight (TOF) type ultra-short pulsed radar reflectometer system has been developed for the electron density profile measurements. The optimization of Band-Pass Filter (BPF) is important for the accurate TOF measurement, that is, a good spatial resolution. Normalized waveform of detector output pulse through each BPF, which center frequency is 30 GHz, is found to be affected by the bandwidth of BPF and it is explained by an impulse response to the system. (Tokihiko TOKUZAWA *et al.*, Plasma and Fusion Research Vol.3, 018 (2008). <http://www.jspf.or.jp/PFR/>)