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5P51 - Present Status of the Chopper-type Marx Modulator Development at KEK

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The Chopper-type Marx modulator is being developed to drive a 10MW L-band multi-beam klystron for the International Linear Collider (ILC) at High Energy Accelerator Research Organization (KEK). It consists of 20 units in series to provide the klystron with a -120kV 140A 1.65ms pulse at a repetition rate of 5pps. The each unit has a control board and 4 chopper circuits in series. Each chopper circuit (Marx cell) is charged in parallel up to -2kV and the unit outputs in series -6.4kV 140A 1.65ms pulse. The droop of the output pulse is compensated by the PWM control of each Marx cell, and the ripple of total output pulse is reduced by the phase shift of the PWM for the each Marx cell. This paper describes present status of the Chopper-type Marx modulator development at KEK.

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