PLASMA PROCESSING DEVICE, POWER SUPPLY SYSTEM, AND CONTROL METHOD

ABSTRACT

A disclosed plasma processing apparatus identifies, from a plurality of digital values obtained by A/D conversion of an envelope signal of a sensor signal in a waveform cycle of an electrical bias, a degree of reflection of source radio frequency power in the waveform cycle or a degree of reflection of the source radio frequency power in each of a plurality of phase periods within the waveform cycle. A power supply controller adjusts a source frequency for each of the plurality of phase periods to reduce the degree of reflection in a subsequent waveform cycle in accordance with the identified degree of reflection. A sampling frequency of the A/D conversion is not less than twice a product of a bias frequency of the electrical bias and a number of the plurality of phase periods within the waveform cycle, and is not greater than an adjustable minimum frequency of the source radio frequency power.

Fig. 3