

The world's first PAM-controlled inverter household air conditioner

Registration No.	Number 00266		
Registration Date	September 10, 2019	Registration Category	Category 1

Name (Model, etc.)	PAM Controlled Inverter Air Conditioner (RAS-501HX2)
Location	Tochigi-shi, Tochigi
	Hitachi-Johnson Controls Air conditioning, Inc.
Owner (Custodian)	Hitachi-Johnson Controls Air conditioning, Inc.
Manufacturer (Company)	Hitachi, Ltd.
Year Manufactured	1997
Year first appeared	1996
Reason For Selection	The world's first commercially available household air conditioner with a pulse-amplitude modulation (PAM)-controlled inverter. The amplitude of the compressor driving voltage had been constant in existing inverters, but expanding the amplitude allowed for control of the compressor rotation speed within a wide range. Further, the maximum power factor was raised to 99% by modulating the input current waveform to a sinusoidal wave. These technologies made energy efficiency and high heating ability a reality, making it recognized as a heating appliance in cold regions, where inverter models had been considered insufficient capacity at the time, and thereby also contributed to the wide adoption of heat-pump heating systems. The PAM-controlled inverter has been applied to refrigerators and other household appliances, and it is valuable for its great improvement of energy saving, efficiency, and other factors.
Registration Standard	1-A (Show an important aspect or stage of the development of science and technology.) 2-A (Played a notable role in improving people's way of life and creating new ways of living.)

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Photo	
Other useful information	