

For Immediate Release

Contact: Akifumi Tanaka Public Relations Office Toshiba Carrier Corporation <u>Tcc-media-relations@ml.toshiba.co.jp</u>

Toshiba Carrier Celebrates IEEE Milestone Plaque Dedication

Kawasaki-shi, Japan, March 16, 2021 - Toshiba Carrier Corporation celebrated today a great honor awarded for its achievement^(*1) in developing and mass-producing the world's-first inverter air conditioners for commercial and residential applications in 1980 and 1981, respectively. The Institute of Electrical and Electronics Engineers (IEEE) recognized the achievement in last September as an IEEE Milestone for the historical significance of the achievement in electrical and electronics fields. The IEEE hosted a ceremony at Fuji Operations, located in Fuji City, Shizuoka Prefecture, Japan, to dedicate a commemorative plaque to the company. The ceremony was attended in person or remotely by about 70 participants, including IEEE officials, Yoshimasa Konagai, Mayor of Fuji City, and distinguished guests from academic and industrial societies.

"The significant accomplishments of Toshiba in developing and mass-producing the world's first split inverter air conditioners for commercial and residential applications led to (inverter air conditioner's) widespread use and improved comfort and energy efficiency around the globe", said Toshio Fukuda, Past President of IEEE, prior to the actual dedication of the commemorative plaque during the ceremony. "In these unsettling times of challenge, it is even more important that we take opportunities to come together and recognize the accomplishments and contributions of our colleagues throughout the engineering and technology professions. IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity".

"It is a great honor that our achievement on the world's first air conditioners has been recognized as an IEEE Milestone", said Toru Kubo, President and Chief Executive Officer of Toshiba Carrier Corporation. "Taking pride in this glory earned by our predecessors and carrying their spirit into the next generation to lead in global innovation as a heat pump solution company, we are committed to offer greener and highly value-added products, systems and services to address various needs from our valued customers and as a result would like to contribute to the society and the global environment."

"We appreciate and value very much this IEEE Milestone recognition as we continue to contribute to society and sustainability through our innovative technologies, products and solutions", commented Oon Wee Chin, Senior Executive Vice President of Toshiba Carrier Corporation. "Working with global alliance partner Carrier, we serve our customers in 142 countries throughout the world. We are committed to develop new and innovative technologies and contribute to a better world for our future generations."

Toshiba Carrier's Fuji Operations include e-THIRD, its global R&D center which started operation back in last May. At e-THIRD, Toshiba Carrier strives to promote innovation based on experiences built around its sophisticated heat pump technologies as well as emerging cyber physical system (CPS) technologies.

*1 The milestone achievement was accomplished when the company was named Tokyo Shibaura Electric Co., Ltd. known as Toshiba.



About World's-First Commercial and Residential Air Conditioners

Toshiba Carrier developed and mass-produced the world's first split-type air conditioners with inverter-driven compressors for commercial and residential applications in 1980 and 1981, respectively. Before the emergence of inverter air conditioners, the arrival of new technology was long awaited for a mechanism to achieve reduced energy loss and more flexible temperature adjustment than the conventional on-off control of the compressor run at a fixed speed (50 or 60Hz in Japan). Toshiba, with a state-of-the-art power electronics technologies and microprocessor control, achieved a significant downsizing in its inverters that were instrumental in variable-speed compressor operation for optimized temperature control with significantly improved comfort and energy efficiency. These innovations have led to wide-spread use of inverter air conditioners across the world.



World's-First Commercial Air Conditioner (Left) and Residential Air Conditioner (Right)

About IEEE

IEEE, an association dedicated to advancing innovation and technological excellence for the benefit of humanity, is the world's largest technical professional society. It is designed to serve professionals involved in all aspects of the electrical, electronic, and computing fields and related areas of science and technology that underlie modern civilization with more than 419,000 members in over 160 countries. In January 1963, the AIEE (American Institute of Electrical Engineers, founded in 1884) and the IRE (Institute of Radio Engineers, founded in 1912) merged to form the IEEE. With 39 technical Societies, ten geographic regions, IEEE offers ample opportunity to network and grow professionally through communities.



Toshiba Group's Environmental Vision 2050

Toshiba Group has developed Environmental Vision 2050, a corporate vision that envisages affluent lifestyles in harmony with the Earth as an ideal situation for mankind in 2050, and will work to realize this vision. Throughout the life cycle of products from manufacture and use to recycling and reuse, Toshiba Group will strive to provide safer and more comfortable lifestyles and create enriched value for customers. Toshiba Group will also strive for harmony with the Earth by working to mitigate climate change, using resources efficiently, and managing chemicals properly in order to reduce environmental impacts.

###