

# Birthplace of radio

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# Marconi

## inventor of radio communications

Since the late nineteenth century when Guglielmo Marconi opened the world's first radio factory in Chelmsford, Essex has played a vital role in the development of modern communications. Marconi's pioneering work led to the development of satellites, radar, broadcasting, telephone, fax and computers - products that have had an impact on the lives of millions of people worldwide.

Marconi, who was educated in England and Italy, studied the works of Heinrich Hertz before setting out to improve the performance of Hertz's apparatus which transmitted and received messages without wires. Marconi increased the range of the equipment, first across a room, then down the length of a corridor and then from the house into nearby fields. In 1896, Marconi came to Britain where he filed the world's first patent application for a system of telegraphy using Hertzian waves. In July of that year, he successfully demonstrated his telegraph system to both the Post Office and the War Office, with a historic transmission on Salisbury Plain in September 1896.

Two years later, Marconi decided to set up a factory to capitalise on the success of his invention. He chose Chelmsford in Essex for its location, conveniently situated a relatively short distance



from London and easily accessible by rail, setting up the world's first wireless factory in December 1898 in an old silk factory - a building that still stands today.

By 1901, he was able to transmit the first transatlantic signal from Cornwall to Signal Hill, Newfoundland, a distance of almost 2,000 miles. In 1909, Marconi was awarded the Nobel Prize in physics, and the following year it became mandatory to install wireless telegraphy apparatus on every large ship.

**In 1910 Marconi, from the premises in Chelmsford, made further communications history with the world's first advertised public broadcast programme - a predecessor to the formation in 1922 of the British Broadcasting Corporation (BBC) by Marconi and five other companies.**

From the outset, research was an integral part of Marconi's operations and Essex has remained central to its continuing development. In 1936, the company brought together its research teams, located in and around Chelmsford, into a single Marconi Research Laboratory at Great Baddow to focus on radio, television and telephony. The 1940s and 50s saw additional research laboratories set up, covering technologies such as radar, general physics, high voltage, vacuum physics and semiconductors and, in the mid-1960s, the laboratories were divided into separate commercial

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divisions: Microelectronics, Computers, Line Communication, Space Communication, Radar and Automation.

These Essex research laboratories, which now form part of the BAE Systems Advanced Technology Centre, have been responsible for many groundbreaking discoveries, including the first patent of liquid crystal technology, first electronic road toll system and first seagoing anti-missile radar system. They have supplied the European Space Agency with systems to track and communicate with satellites and deep space probes, and developed three generations of advanced satellite antennas for mobile communications worldwide.

Today, mid-Essex is the centre of a dynamic innovation community that draws directly on the heritage of the Marconi company. The area is home to leading global technology companies such as e2v technologies, BAE Systems and Gardner Aerospace as well forming the hub of an innovation cluster that supports collaborative research and development among small, medium and large companies.

**The electronics and advanced technology skills that have continued to develop make Essex a prime location for companies looking for the highest levels of technical expertise – a fitting tribute to Marconi's legacy.**



INVEST Essex provides confidential advice and practical support to companies wanting to establish a presence or expand in the UK. We promote Essex as an outstanding business destination and help existing and potential investors make the most of our strategic location, thriving business environment, and quality of life.

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### Key



Made in Essex



Grown in Essex



Invented in Essex



Helped in Essex