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Digital Mobile Radio for Police

Digital mobile radio systems required twice as much frequency bandwidth as analog FM systems. In order to solve this problem, a new codec technology capable of ensuring good sound quality even at a bit error rate of 10^{-2} or more due to fading at 8 kbps or less and an 8 kbps narrowband digital portable radio using this technology were developed, and since 1990, this has been put into practical use as a portable radio communication system for police. In addition, a new wide area digital mobile radio system integrating simultaneous transmission/reception systems and press talk systems has been put to practical use. These achievements have greatly contributed to the advancement of the mobile radio field and the full-scale digitalization of commercial mobile radio.

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Mobile Satellite Communication Systems

Research and development and the commercialization of mobile satellite communication systems were promoted in the 1980s and 1990s. In international communications, a digital system for Inmarsat was proposed and contributed to the practical use of Inmarsat B/M/Mini-M and aeronautical satellite communication systems. In addition, comprehensive research and development of mobile satellite communication systems was promoted using the engineering test satellite ETS IV launched in 1987. Furthermore, a Multi-Port Amplifier (MPA) was invented to enable the efficient use of power by multi-beam communication satellites, and after space demonstration by the engineering test satellite ETS-VI, the S-band (2.6 / 2.5GHz) using the geostationary satellite N-STAR mobile satellite communication service was commercialized. These results have greatly contributed to the development of mobile satellite communication technology, including the application of MPA to domestic and overseas multi-beam mobile communication satellites.