Over the past decade, digital technology has undergone unprecedented development. The Internet, which originally served as a mean of communication among academics, has become the main communication mechanism used throughout the world. The way people can communicate with each other is much easier now. As a result, the attention of governments and secret agencies has also been focused on cyberspace, with the aim of controlling it as much as possible. Following the Snowden revelations in 2013, the debate on the international scene regarding the feasibility of mass surveillance as a tool in the fight against terrorism began. Since the events of September 11, the powers of the secret services in the field of communication of persons have been extended. This practice has brought up some interesting and unresolved issues. Are such activities permissible at all? If so, under what conditions? This diploma thesis analyzes the legitimacy of massive electronic surveillance and data collection in international law in the context of the protection of human rights, especially the right to privacy. It focuses on electronic surveillance conducted by the American National Security Agency (NSA) and the British Government Communications Headquarters (GCHQ). Since these are foreign monitoring programs, the work devotes a thorough analysis to the controversial issue of the extra-territorial applicability of international human rights treaties in the context of cyberspace. The conflicts thus come between the positive obligation of states to protect their citizens from the threat of terrorism and the obligation to protect and respect the right to privacy. Thesis deals with the most important criteria that need to be met to ensure that this invasion of privacy is in accordance with international law. The thesis firstly describes the system of human rights protection under the International Covenant on Civil and Political Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms with emphasis on the decision-making process of the Human Rights Committee and the case law of the European Court of Human Rights. It also deals with the issue of cyberspace as a place regulated by law and surveillance characteristics as such. It is also argued, that the above-mentioned human rights instruments should be applicable extra-territorially and within cyberspace. Subsequently, these principles are applied to NSA and GCHQ surveillance programs with the assessment of their legality, legitimacy and proportionality. Another issue that is also briefly presented in the end of the thesis, is the issue regarding electronic espionage as an interference with state sovereignty.