Wireless technologies for health monitoring systems have seen considerable interest in recent years owing to its potential to achieve vision of pervasive healthcare that is healthcare to anyone, anywhere and anytime. Development of miniaturized wearable wireless medical devices which have the capability to sense, compute, and send physiological information to a mobile gateway, forming a Body Sensor Network (BSN) is considered as one step towards achieving the vision of pervasive health monitoring systems (PHMS). PHMS consisting of wearable body sensors encourages unsupervised long-term monitoring reducing frequent visiting of hospital and nursing cost. Therefore, it is of utmost importance that operation of PHMS must be reliable, safe and have longer lifetime. A model-based automatic code generation provides such state-of-art code generator that generates sensor and smart phone code from high-level specification of a PHMS. Code generator intakes meta-model of PHMS specification, uses codebase containing code templates and algorithms, and generates platform specific code. The Health-Dev, a framework for model-based development of PHMS, uses code generator to implement PHMS in sensor and smart phone. As a part of this thesis, model-based
automatic code generation was implemented, evaluated, and experimentally validated. The generated code was found to be safe in terms of ensuring no race condition, array and pointer related errors in code. For a given application, generate code was more optimized compared to hand-written BSN benchmark code.