ABSTRACT

In general, how to load program on the microcontroller is using downloader. However, almost all downloader available on the market, in the process loading program firstly is connected to computer using parallel port or serial port. This is a constraint for us who use laptop because we did not find parallel port and serial port and restrict us in the mobile because our laptop can connect with downloader if any wires are connected.

At this final project, has been developed downloader from an existing system that is USB downloader AVR microcontroller based on ISP, but there is replacement of the transmission media feature that use radio frequency connectivity. So in this system, there are transmitter block consists of USB to serial converter circuit is equipped with radio frequency transceiver and receiver block consists of minimum system ATtiny2313 is also equipped with radio frequency transceiver. Thus, data transmission can be done wirelessly. Radio frequency transceiver used is XBee-Pro module.

From the design and realization of this downloader AVR, the system can work well. When we are ready to load the program on the microcontroller, then we connect between transmitter block and receiver block. For maximum distance loading program that can be achieved using this radio frequency is adapted with XBee-Pro RF (Radio Frequency) transceiver module used for outdoor measurement with LOS condition is 140m and obstacle condition is 75m. Then, for indoor measurement with corridor type measurement is 100m and measurement between one room and another room is 21m.

Keywords: ISP, Radio Frequency, Downloader, Microcontroller AVR, XBee-Pro.