

# System Building using the WISP: A Flexible RFID Reader

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We present the design and evaluation of a flexible UHF RFID reader suited for experimentation. Our reader is built using the USRP software radio platform in conjunction with software we developed in the GNU Radio framework. We believe this is the first inexpensive tool that readily enables changes to the physical and MAC layer of RFID systems. Our reader further has sufficient performance to interoperate with commercial EPC Gen-2 RFID tags and achieves roughly 75% of the range of a commercial reader with comparable power. When used in conjunction with the Intel WISP, our system can be used to develop novel backscatter protocols.