

Web Controlled Spy Car

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Introduction: Controlling a Remote Controlled Car from a Website

Video Streaming from the Car

- User sees live video feed from the car on the website via an on-board Wi-Fi camera

Wireless Car Control

- User controls the car from a website via keyboard input or the buttons on the website

Problem Description: Interfacing Wirelessly with the Remote Controlled Car

- The SmartFusion board needs to send the appropriate voltage signals to the remote control to move the car as specified by the user
- The SmartFusion board needs an add-on Wi-Fi chip in order to receive messages from the website to control the car wirelessly
- The Wi-Fi chip must connect to a designated port and listen for messages from the website
- The website needs to communicate on the same port and send control messages based on the user's website input
- The website must display web camera's video stream

Proposed Solution: Using Wireless Communication on a Port to Control the Car

Interfacing with the User

- The server computer hosts the website and port communication scripts



- The website provides a user interface for controlling the car with live video feed from the car's camera and control buttons for moving the car

Controlling the Car

- The SmartFusion board handles the Wi-Fi chip's control message interrupt by sending a 5V signal to the remote control to move the car as directed by the user



Wireless Communication

- When the website is launched, a connection is opened to a designated port for communication with the Wi-Fi chip
- When powered, the SmartFusion board interfaces with and powers the Wi-Fi chip, which connects to the designated port and listens for control messages



- When a control button on the website is pressed, a python script sends a control message to the port
- When a control message is received by the Wi-Fi chip, the Wi-Fi chip triggers a UART interrupt in the code running on the SmartFusion board



Conclusion

Through wireless communication over a port, a user can send control messages from a website to a Wi-Fi chip. This chip triggers an interrupt in the SmartFusion board, which, in turn, handles the interrupt by sending the appropriate voltage signal to the remote control to move the car as designated by the user. Through hosting the IP address page of the on-board camera's video feed, the user can also see live video feed from the car on a website.