

# ADAPTIVE RADIO OUTPUT SCALING

FOR POWER AND BANDWIDTH SAVING

Koen Zandberg

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FOR **POWER** AND BANDWIDTH **SAVING**

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**ADAPTIVE RADIO**  
**OUTPUT SCALING**  
**FOR POWER AND BANDWIDTH SAVING**

# METHOD

# FEEDBACK

- Retransmissions
- CSMA-CA
- (No) ACK
- RSSI/LQI

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- Retransmissions
- ~~CSMA-CA~~
- (No) ACK
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# PROBING

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No Retransmissions → Decrease Power

# PROBING

No Retransmissions → Decrease Power  
Retransmissions → Increase Power

# PROBING

TCP congestion avoidance style:

# PROBING

TCP congestion avoidance style:

- Reno

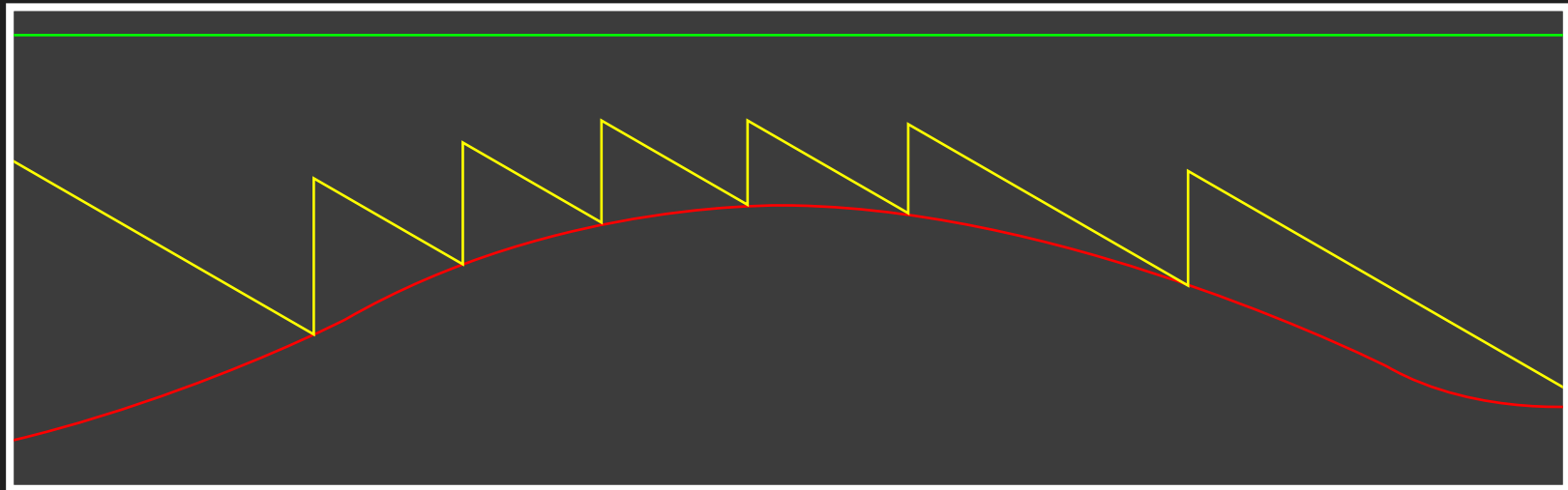
# PROBING

TCP congestion avoidance style:

- Reno
- Cubic

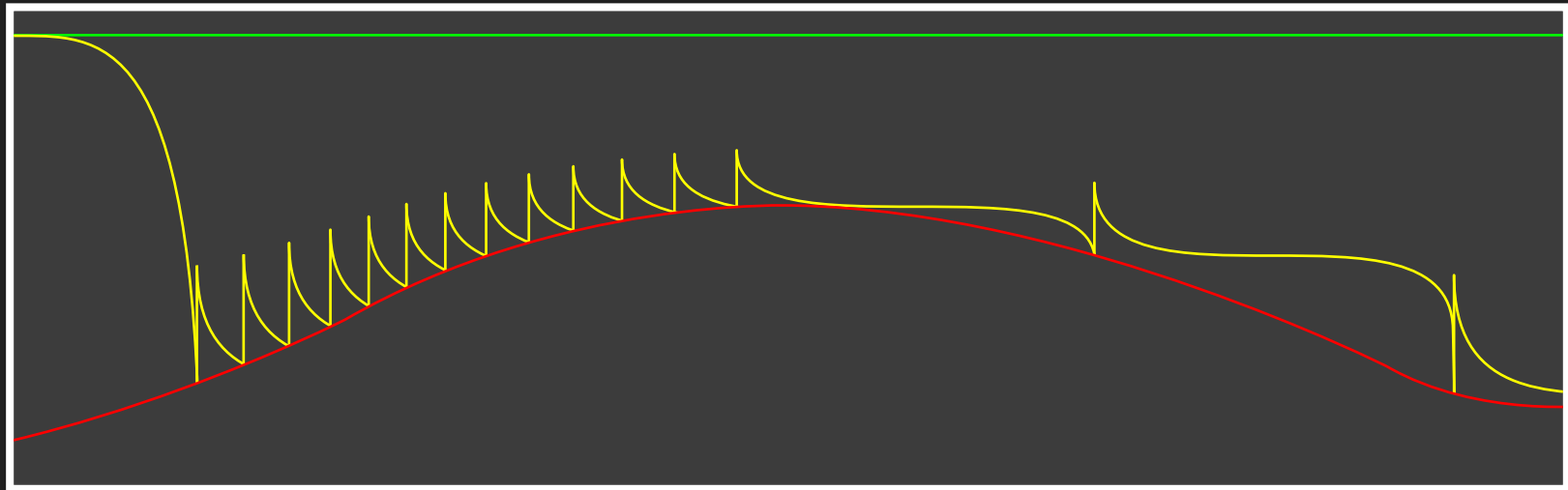
# PROBING

## RENO (POWER STYLE)

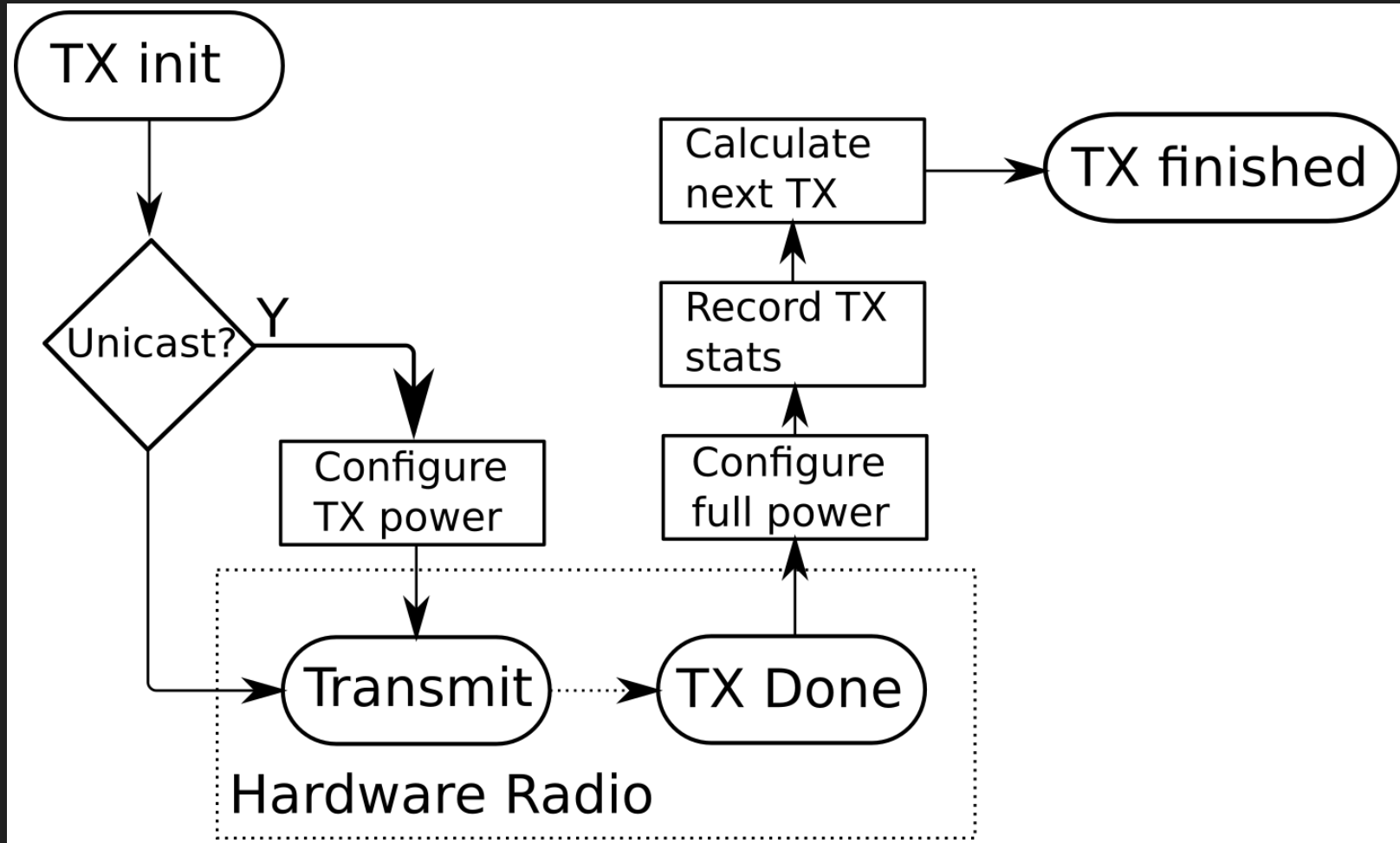




# PROBING CUBIC (POWER STYLE)



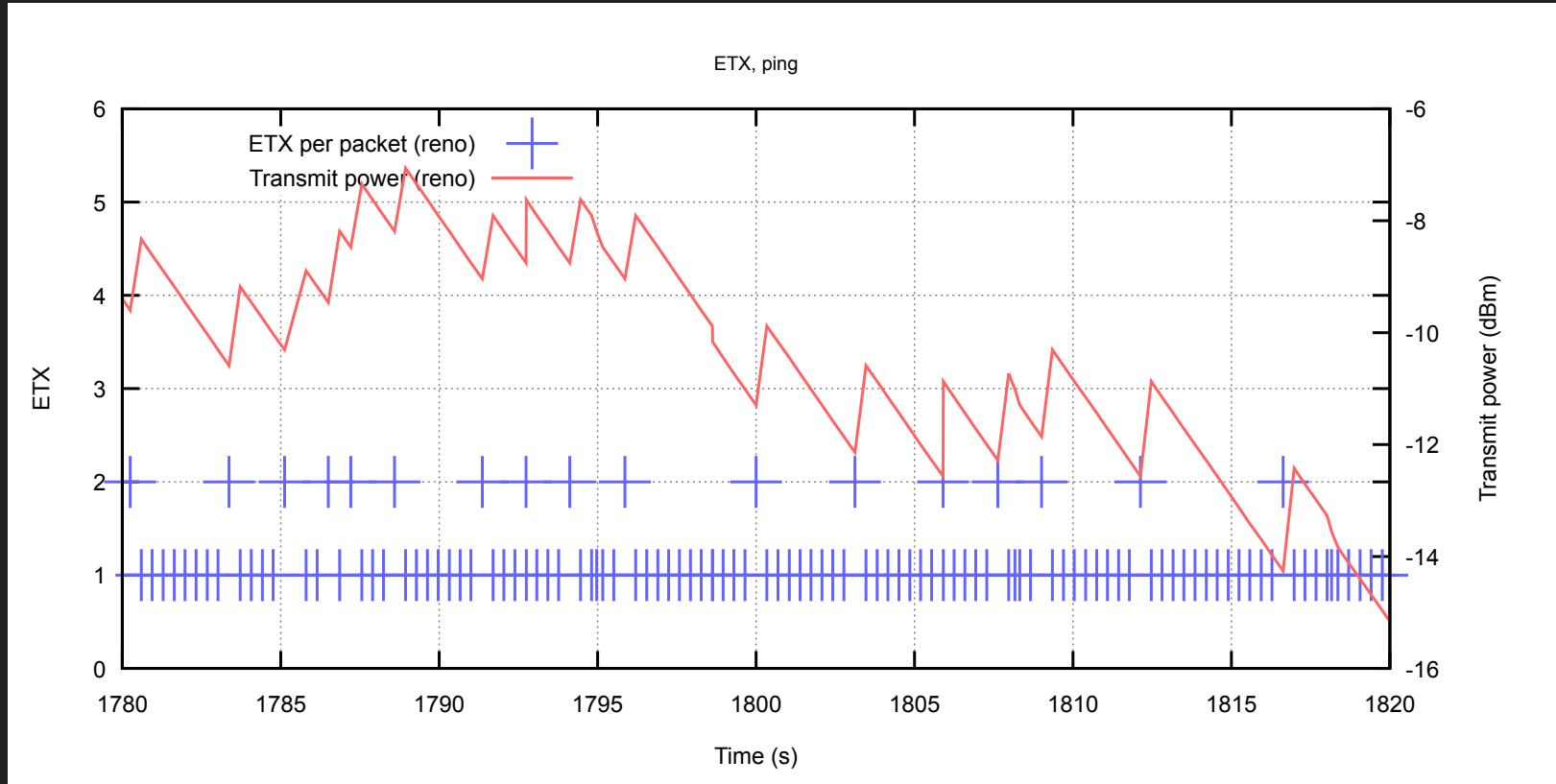
# IMPLEMENTATION



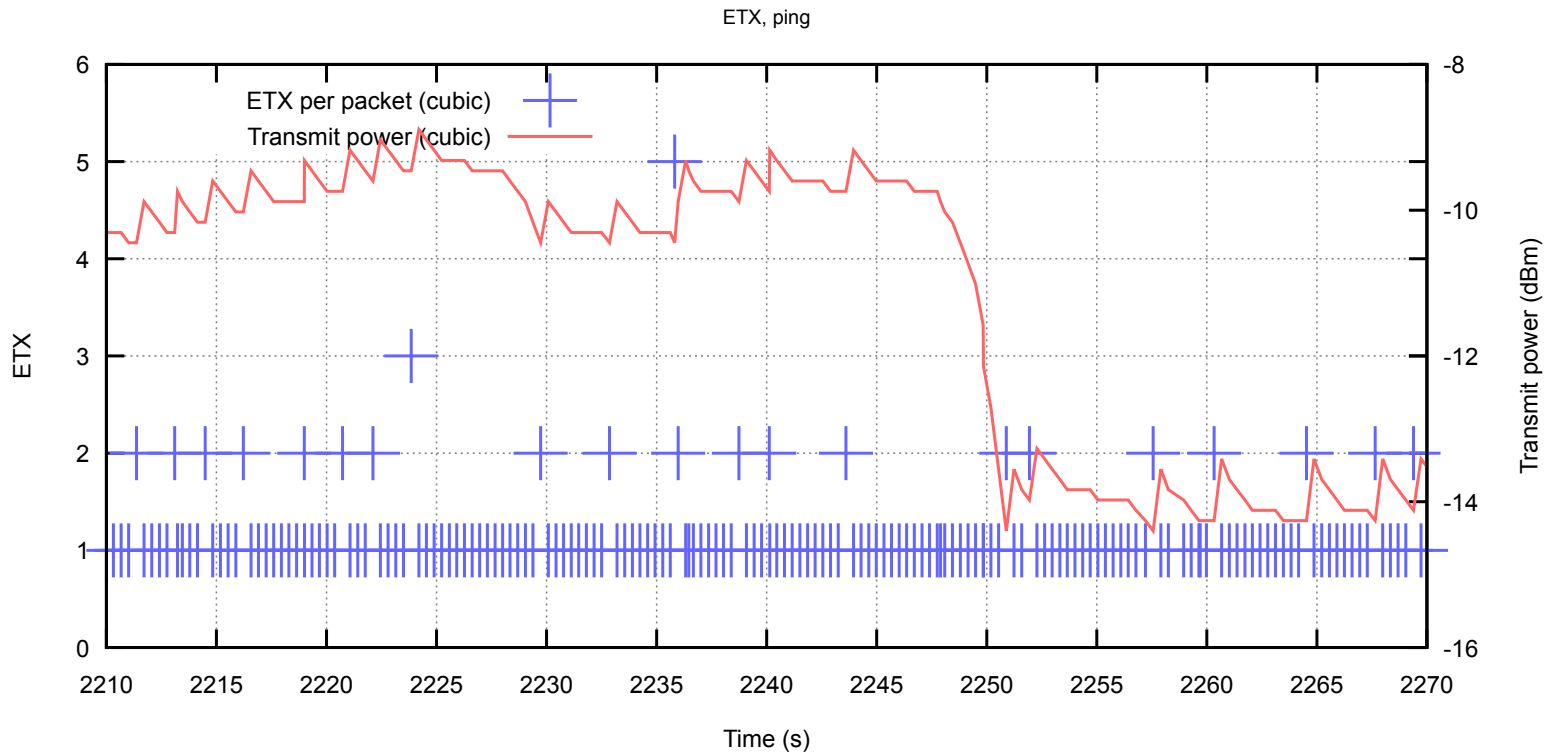
# MEASUREMENTS

REALISTIC URBAN ENVIRONMENT

# RENO STYLE



# CUBIC STYLE



# CONCLUSION/DISCUSSION

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- Works

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- Works
- Susceptible to random loss



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- Real power saving minimal

# CONCLUSION/DISCUSSION

- Works
- Susceptible to random loss
- Real power saving minimal
- Receiver independent

# DEMO