col [2:0] →

Game Enable →

ballPos Reset →

ball Speed [9:0] →

→ ballPos X [9:0]

→ ballPos Y [9:0]

reg ball_dir X , ball_dir Y

Case 1): Pad Col ⟶ paddle collision

- invert X
- invert Y
- update ball position based on speed

2): Net Col ⟶ net collision

- reset ball position
- update ball position

3): Cel Col ⟶ top boundary collision

- same X
- invert Y

4): Flo Col ⟶ bottom boundary collision

- same X
- invert Y

5): Wal Col ⟶ left boundary collision

- invert X
- same Y