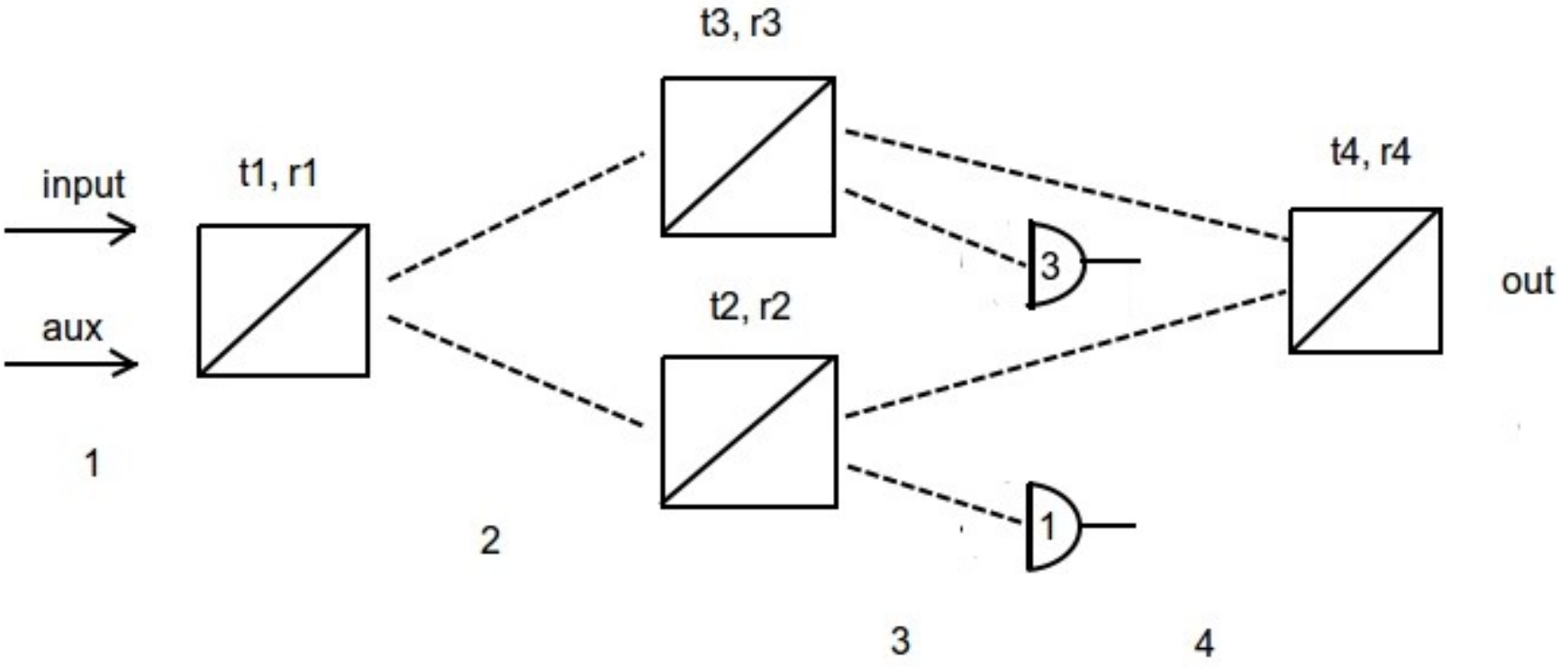
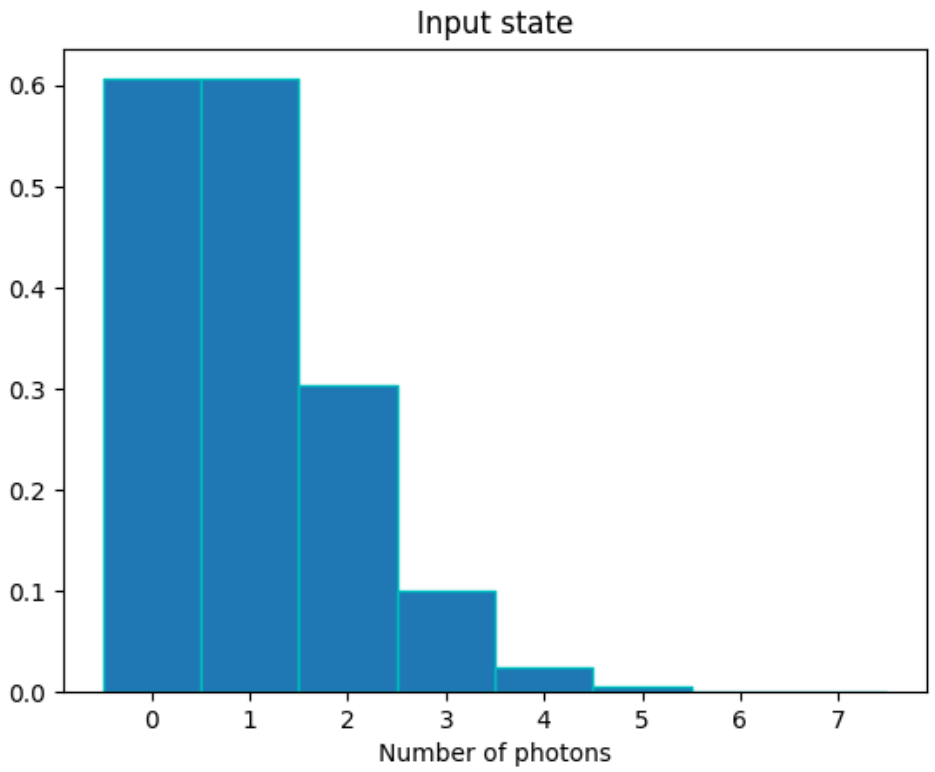
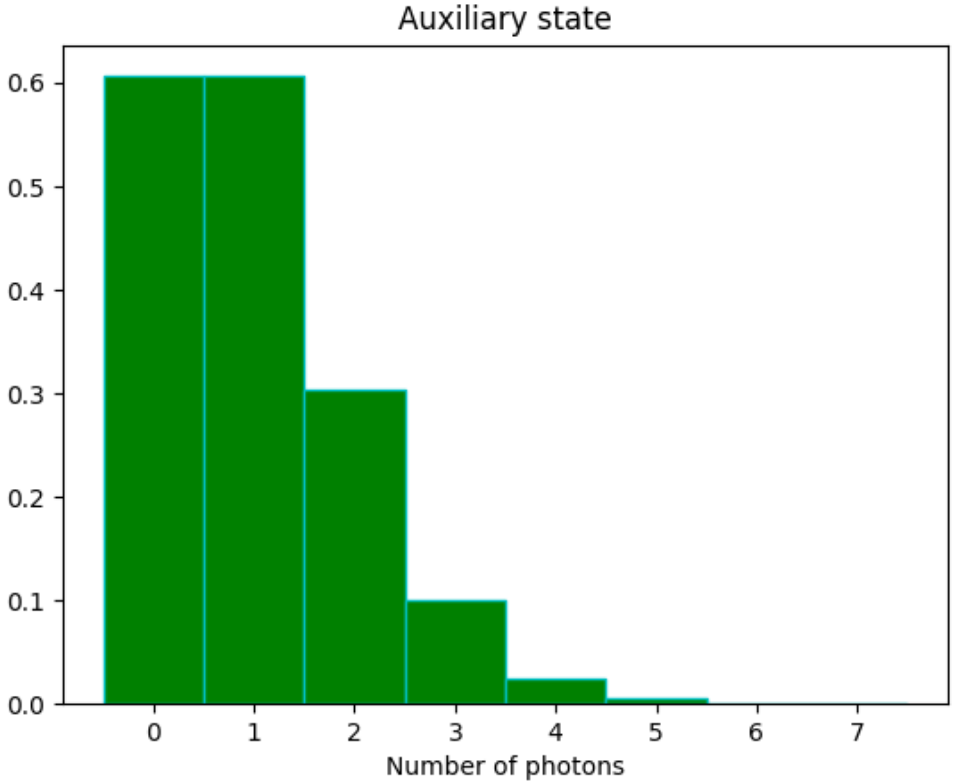
Setup.

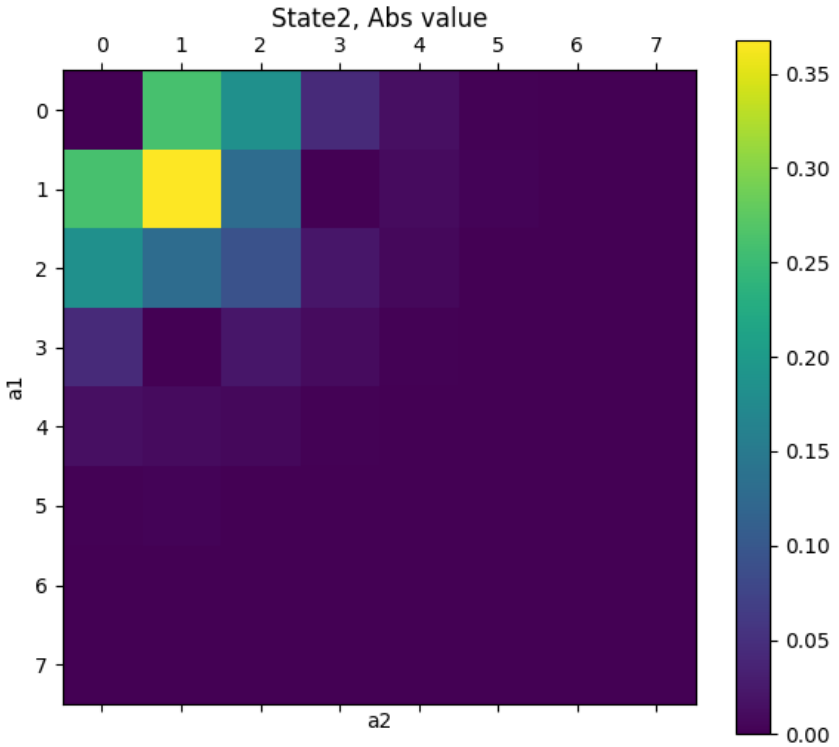


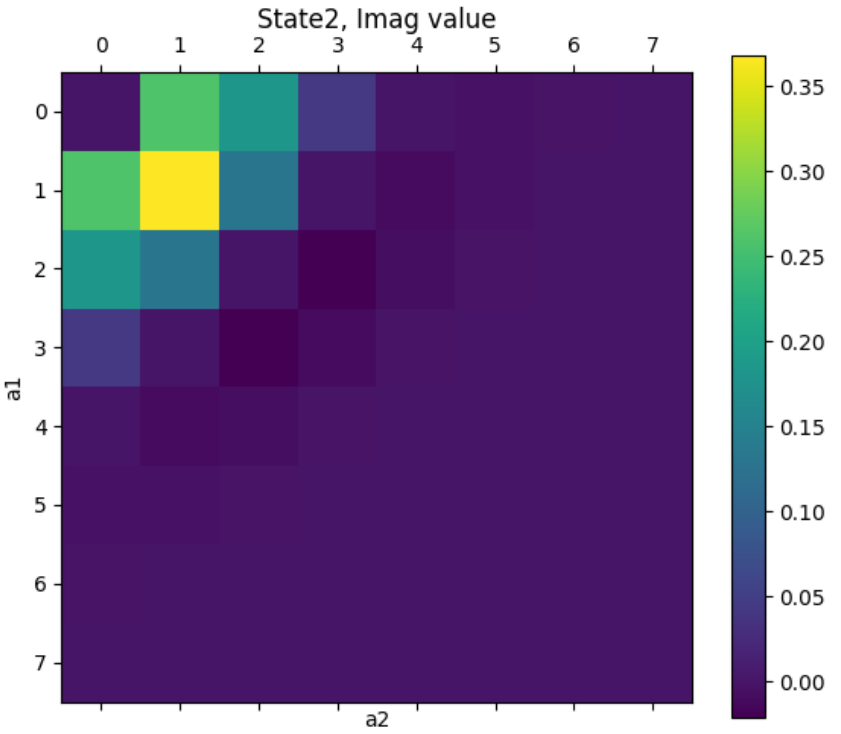
1) Input — coherent state. Aux — coherent state.

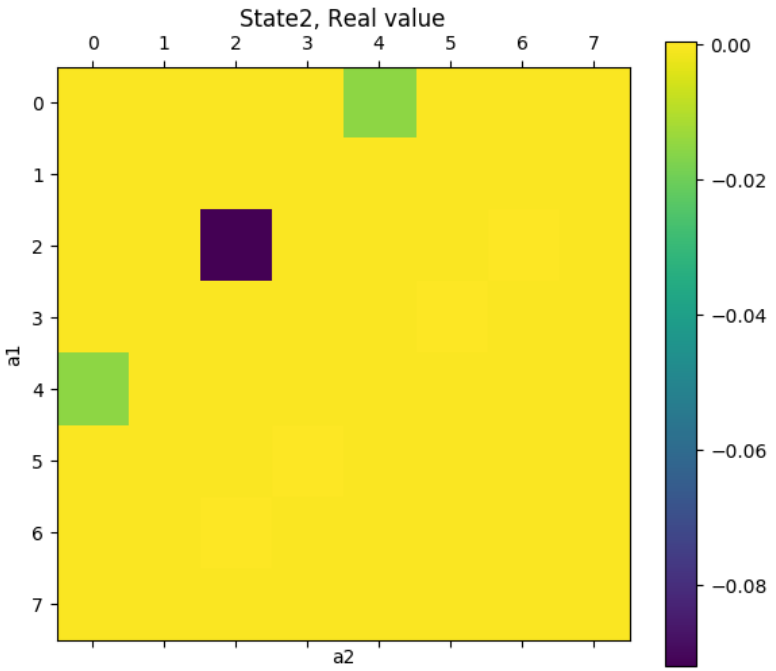




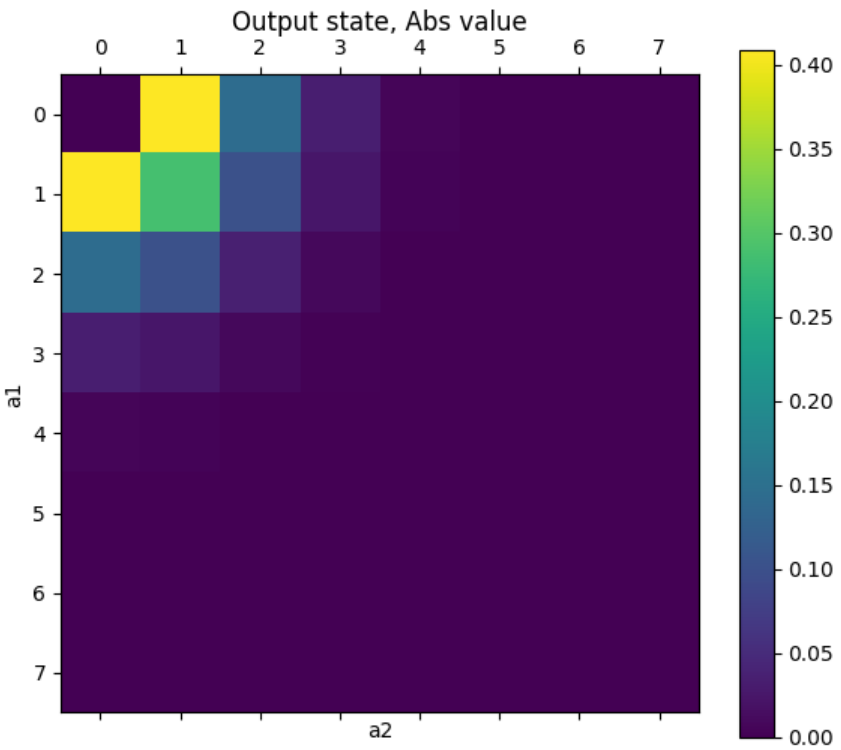
State in area2.

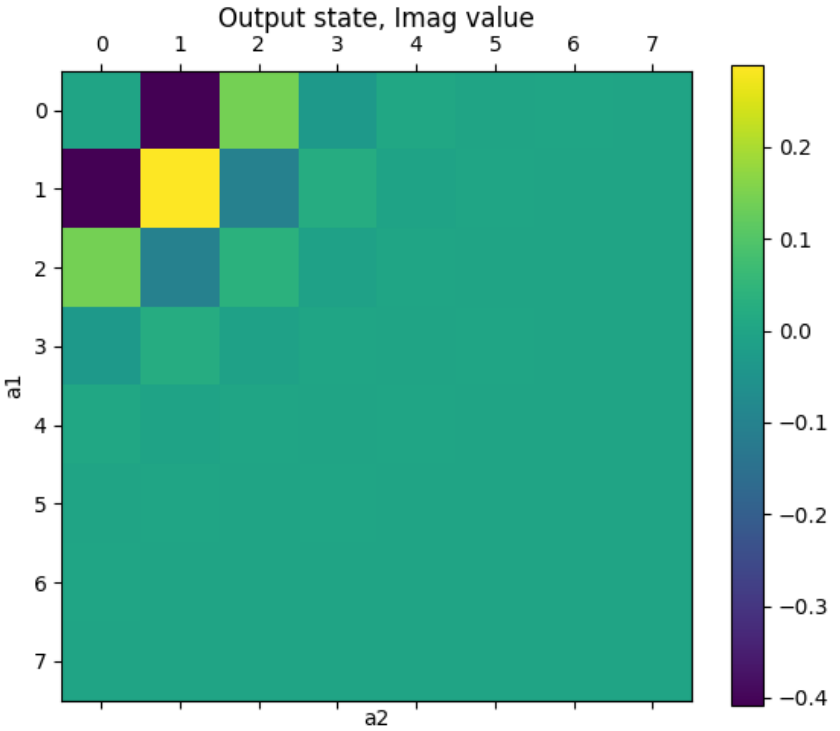


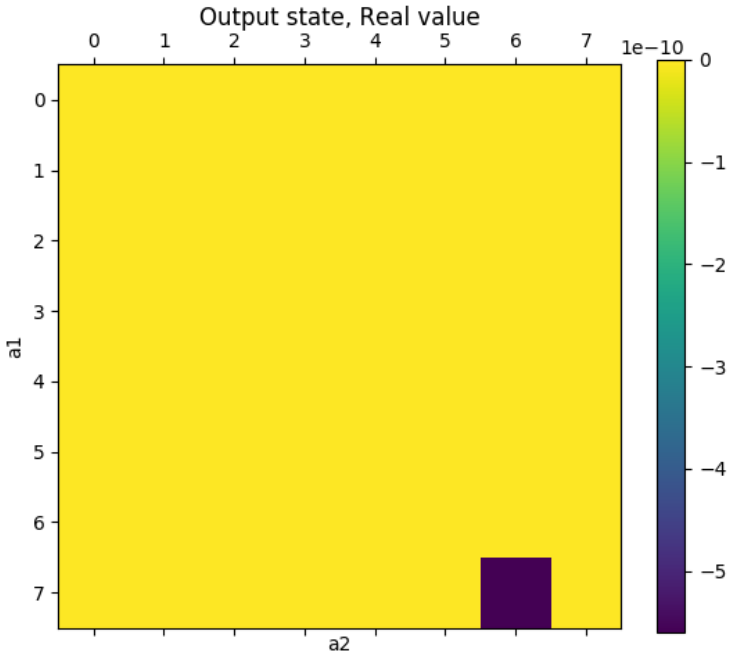




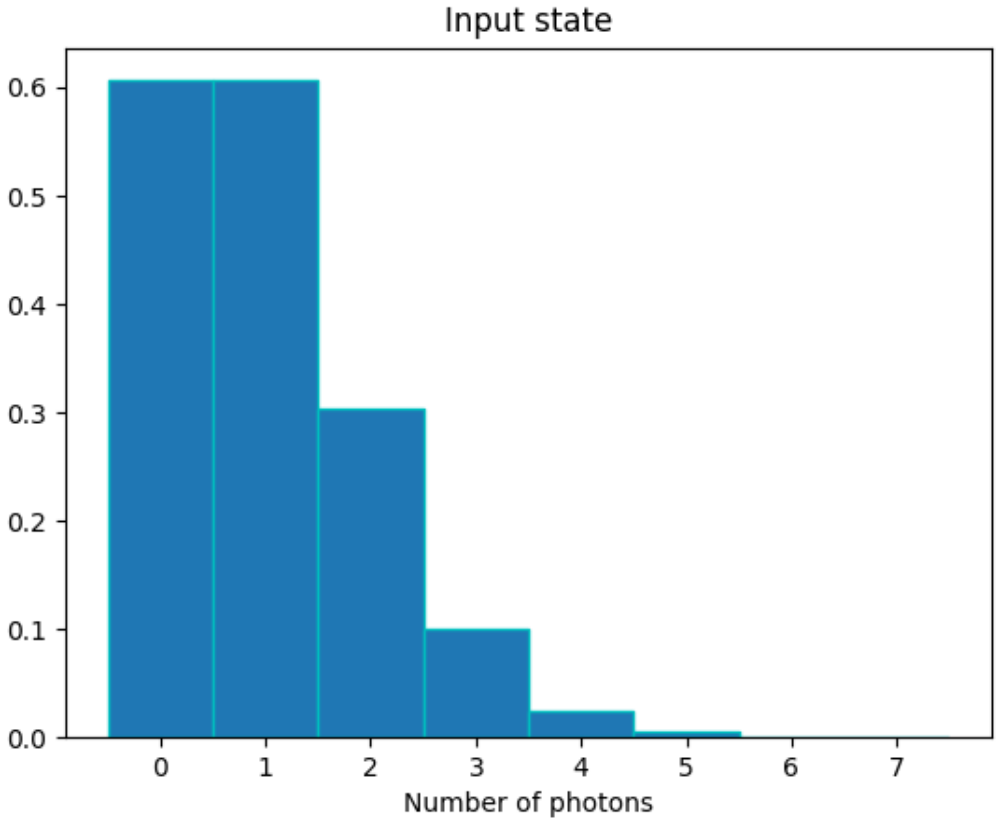
Output(final) state.

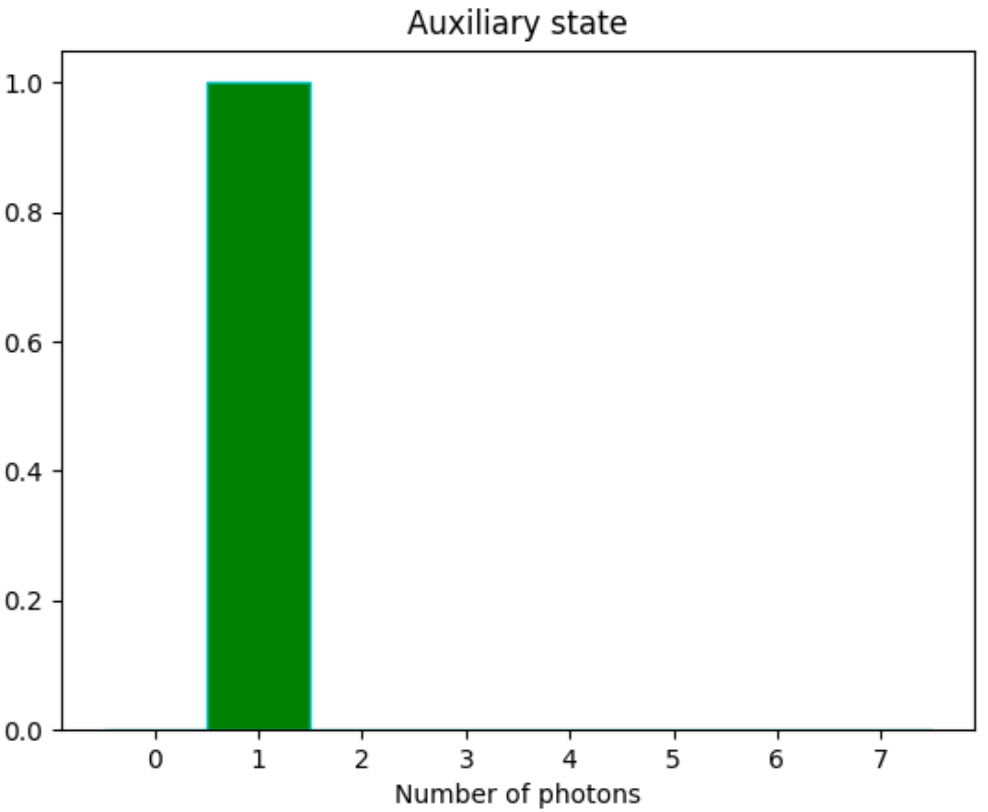




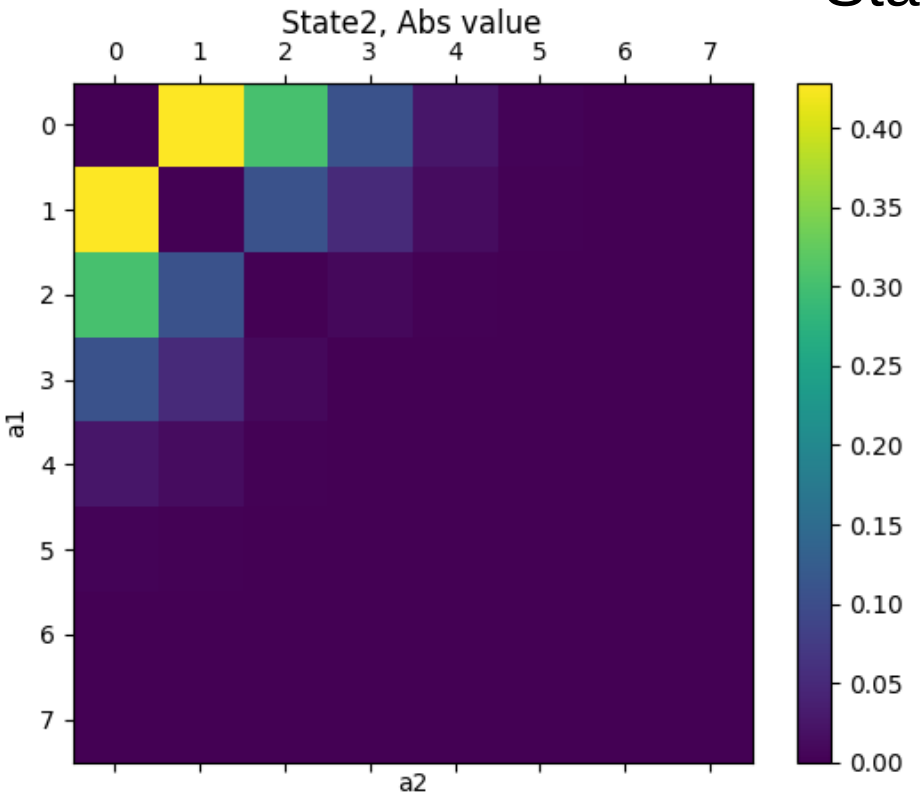


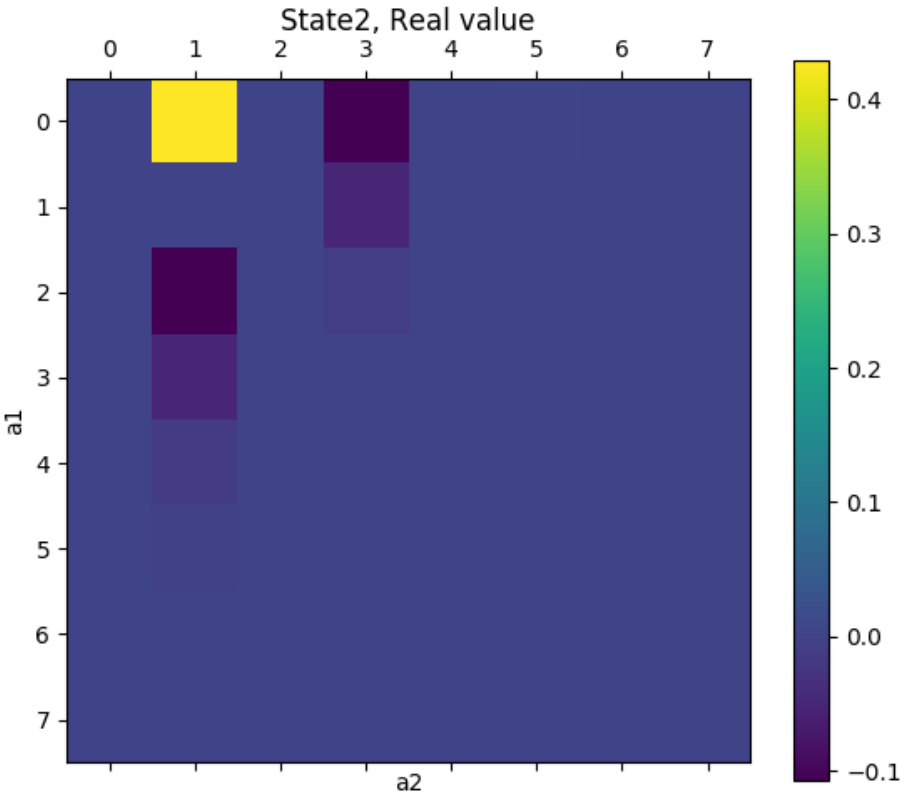
2) Input — coherent state. Aux — single photon.

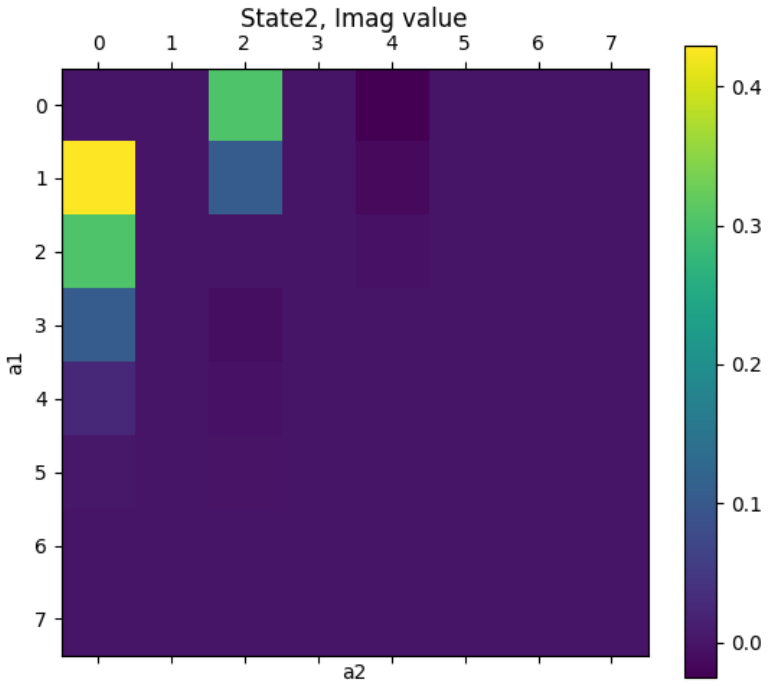




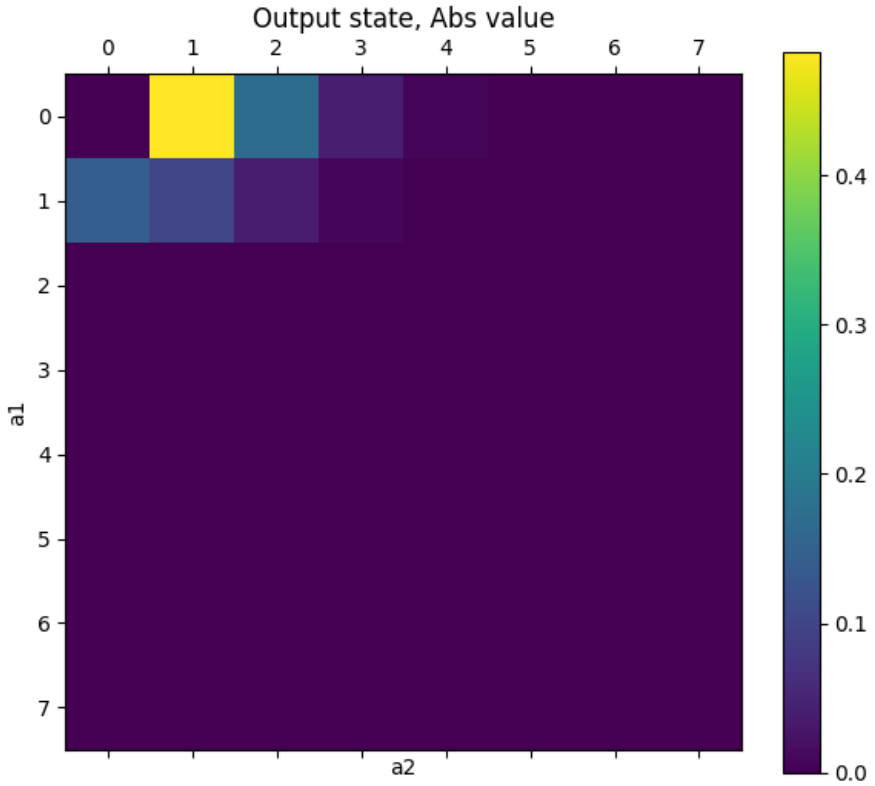
State in area2.

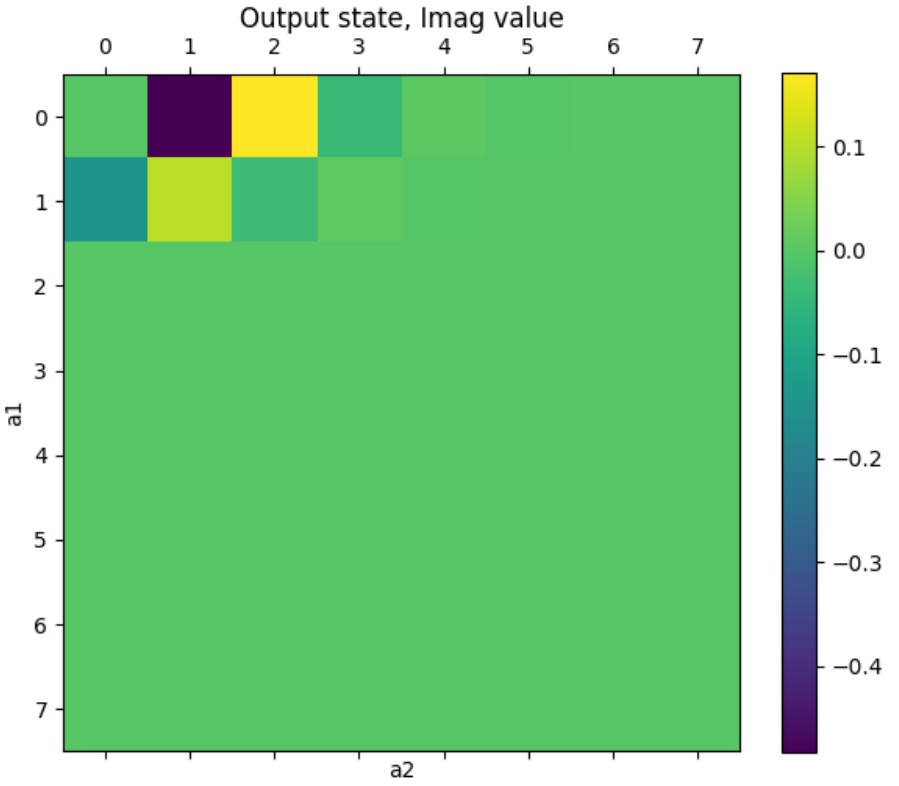


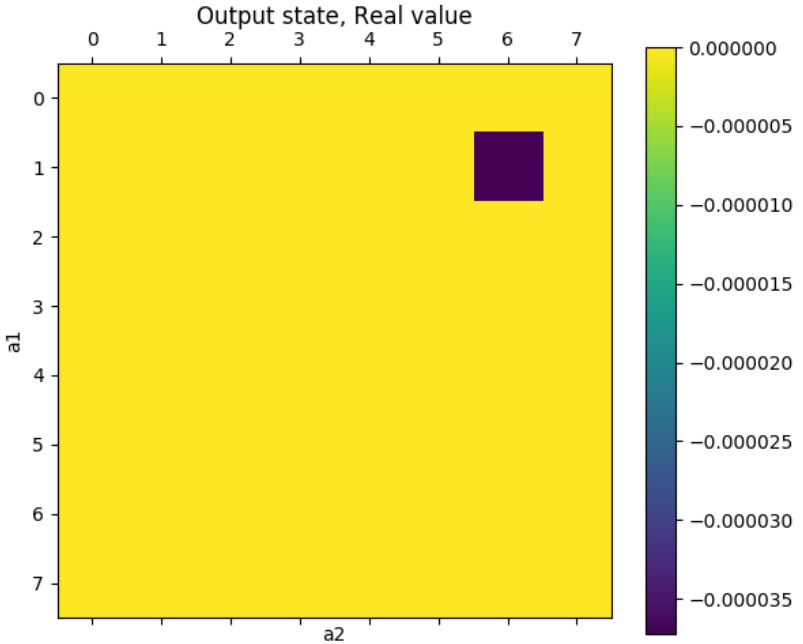




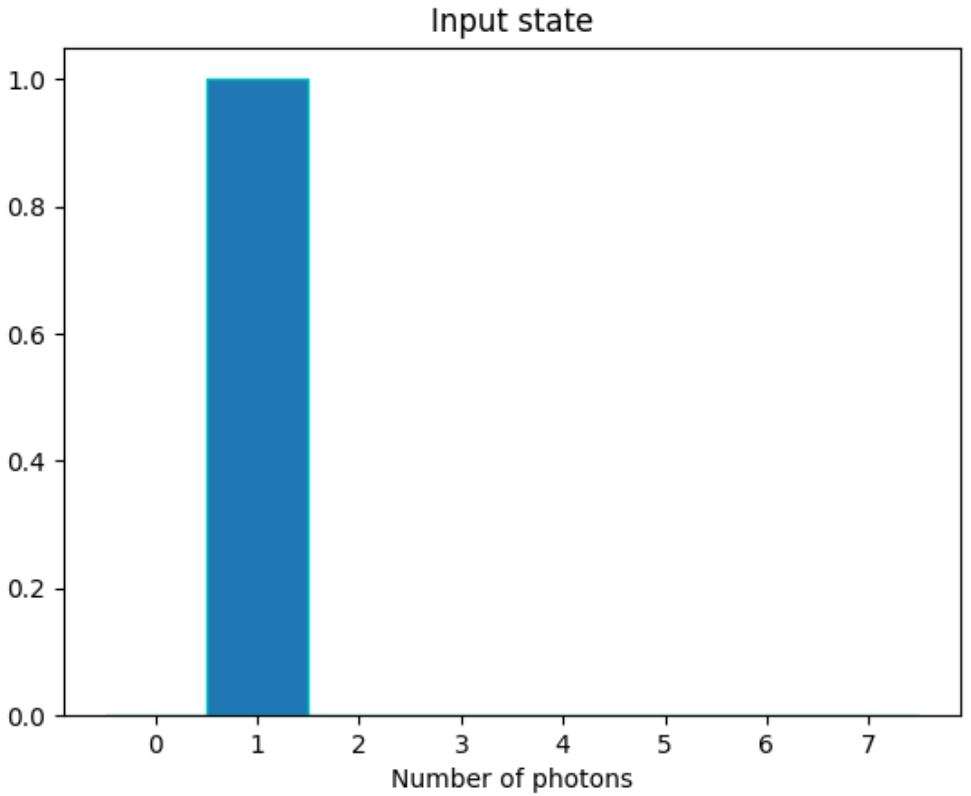
Output(final) state.

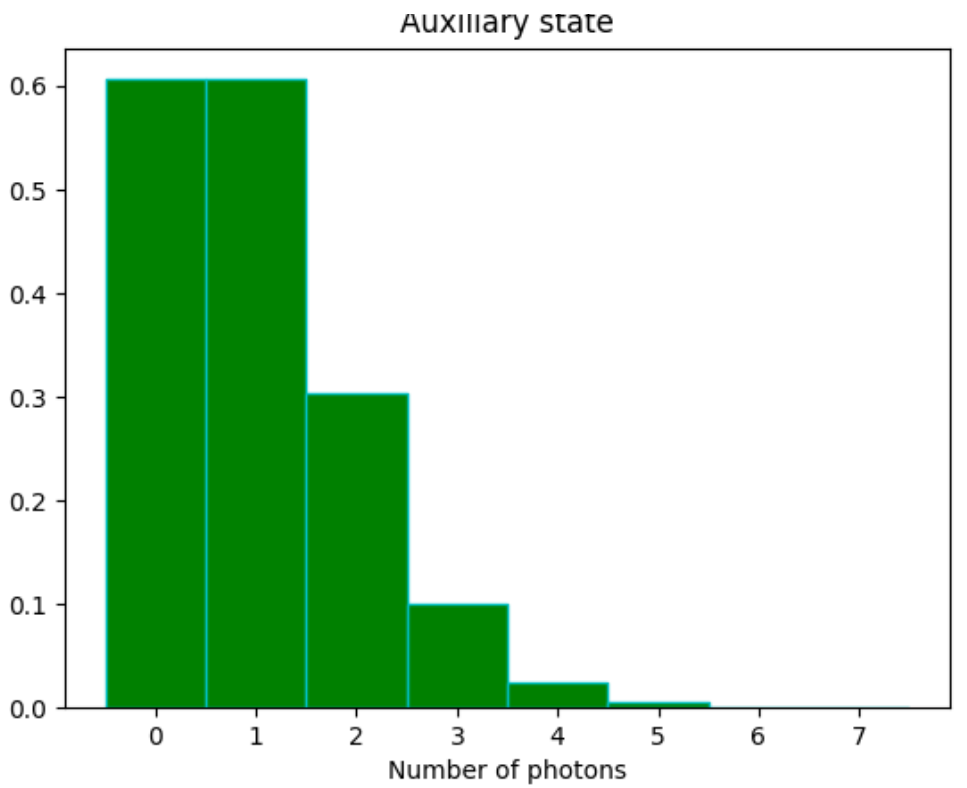




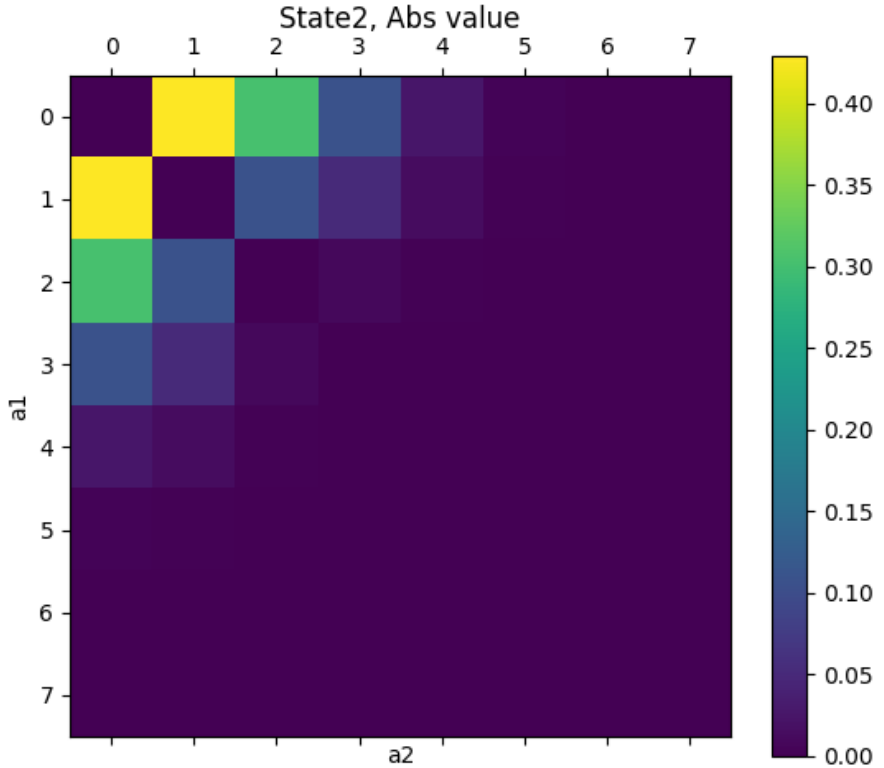


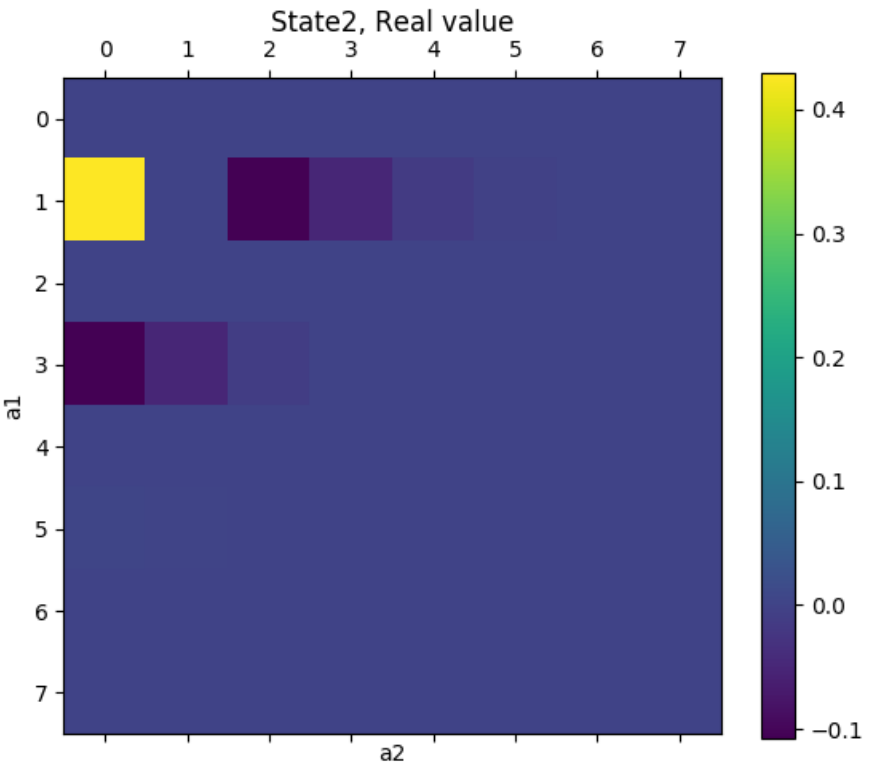
3) Aux — single photon. Input — coherent state.

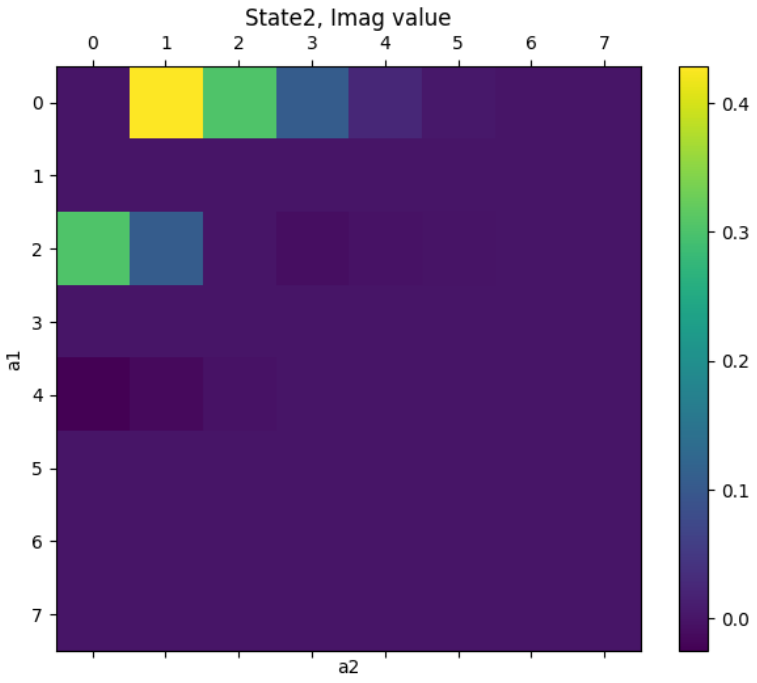




State in area2.







Output(final) state.