The developments in the field of the application of multiple input-multiple output (MIMO) setups utilizing the high frequency band of wireless communications represent an opportunity for improvement. The inter-symbol interference (ISI) caused by the selective fading of multiple received signals alongside the randomness of the ionospheric paths that are used for such transmissions mean there is a need for a novel system that allows for consistent communication. Traditional equalization methods designed for single input single output will not work in MIMO due to the computational cost of matrix operations that must be repeated quickly enough to account for the continuous changes of the ionosphere. The purpose of this research is to discuss two applications of systems that can select equalization algorithms to address selective fading, optimize parameters for given ionospheric conditions, and fulfill its purpose quickly and continuously to adapt for the changes that occur over time. One system uses q-learning based optimization, while the other uses a genetic algorithm. Both implementations are compared, and the advantages and disadvantages of such systems are discussed.