One checks easily that G is stable under θ, and that

$$K = G^\theta = \left\{ k = \begin{pmatrix} K_{11} & 0 & K_{13} \\ 0 & K_{22} & 0 \\ K_{31} & 0 & K_{33} \end{pmatrix} \;\middle|\; \begin{array}{l} K_{11}, K_{13}, K_{31}, K_{33} \in \mathrm{Mat}(p,p) \\ \begin{pmatrix} K_{11} & K_{13} \\ K_{31} & K_{33} \end{pmatrix} \in O(2p,\mathbb{C}) \\ K_{22} \in O(2q+1,\mathbb{C}) \\ \det(k) = 1 \end{array} \right\}$$

$$\cong S(O(2p,\mathbb{C}) \times O(2q+1,\mathbb{C})).$$

This choice of K corresponds to the real form $G_{\mathbb{R}} = SO(2p, 2q+1)$ of G.

Let $S \subseteq K$ be a maximal torus of K contained in T. This is an equal rank case, so in fact $S = T$. We formally distinguish coordinates on $\mathfrak{s}$ (labeled by X variables) from those on $\mathfrak{t}$ (labelled by Y variables), with restriction given by $\rho(Y_i) = X_i$.

This is the first time that we have encountered a K which is not connected. We handle this by considering the connected components of the closed orbits separately. As we will see, each closed orbit has two components. Each is a single K^0-orbit, with $K^0 = SO(2p,\mathbb{C}) \times SO(2q+1,\mathbb{C})$ the identity component of K. These K^0-orbits coincide with the closed $\widetilde{K}$-orbits, with $\widetilde{K} = S(Pin(2p,\mathbb{C}) \times Pin(2q+1,\mathbb{C}))$ the corresponding (connected) symmetric subgroup of the simply connected cover $\widetilde{G} = Spin(2n+1,\mathbb{C})$ of G. Since $S \subset K^0$, each such component is stable under S, and hence has a S-equivariant class. We apply our usual method to find formulas for these S-equivariant classes. Having done so, we next identify exactly how the closed K-orbits break up as unions of these components. We find a formula for each closed K-orbit by simply adding the formulas for the two components. Finally, we parametrize the K-orbits by $(2p, 2q+1)$-clans satisfying a certain additional combinatorial property, and describe the weak closure order on $K\backslash G/B$ in terms of this parametrization. This allows us to perform the rest of the computation as in the type A cases.