A class of four dimensional CR submanifolds of the nearly Kähler six sphere

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A submanifold $M$ of the nearly Kähler sphere $S^6(1)$ is called a CR submanifold if there exists a $C^\infty$-differential almost complex distribution $U : x \rightarrow U_x \subset T_x M$, i.e., $JU = U$ on $M$, such that its orthogonal complement $U^\perp$ in $TM$ is totally real distribution, i.e., $JU^\perp \subset T^\perp M$, where $T^\perp M$ is the normal bundle over $M$ in $S^6(1)$. Since the four dimensional CR submanifolds of $S^6(1)$ can not be totally geodesic, we investigate four dimensional CR submanifolds that admit the distribution $D(p) = \{X \in T_p M \mid h(X, Y) = 0, \text{ for all } Y \in T_p M\}$, of the maximal possible dimension which is two and classify them using sphere curves and vector fields along those curves.