We consider orthogonal and maximal sets on $L^2(X_\lambda, \mu_\lambda)$ where $\mu_\lambda$ is the Hutchinson measure associated with the Bernoulli Iterated Function System (IFS) for $\lambda \in (0, 1)$ and $X_\lambda$ is the support of the measure. By previous theorems, we have an orthonormal basis of exponential frequencies for our space where $\lambda = \frac{1}{2^n}$, which we denote $\Gamma_{\frac{1}{2^n}}$. We investigate sets $c\Gamma_{\frac{1}{2^n}}$ where $c$ is an odd integer dependent on $2n$. We prove that the set $3\Gamma_{\frac{1}{4}} \cup \{x : x = -4^n(1 + \sum_{j=n+1}^{p} a_j 4^j), \ p < \infty, \ n \in \mathbb{N}_0, \ a_j \in \{0, 3\} \}$ is an orthogonal and maximal set for the space $L^2(X_{\frac{1}{4}}, \mu_{\frac{1}{4}})$, but is probably not an orthonormal basis for the set. (Received July 27, 2010)