(ii) Suppose now that k has the Pick property and $\{\lambda_i\}$ is an interpolating sequence for $\mathcal{H}_k$, so there are constants $c_1, c_2 > 0$ such that

$$c_1 \sum |a_i|^2 \ \leq \ \| \sum a_i g_i \|^2 \ \leq \ c_2 \sum |a_i|^2.$$

Let (w_i) be any sequence in the closed unit ball of l^∞. Define a linear operator R on $\vee\{g_i\}$ by

$$R : g_i \ \mapsto \ \bar{w}_i g_i.$$

Then $\|R\| \leq \sqrt{\frac{c_2}{c_1}}$, because

$$\begin{aligned}
\| \left(\frac{c_2}{c_1} - R^* R \right) \sum a_i g_i \|^2 \quad &= \quad \sum \bar{a}_i a_j \langle \left(\frac{c_2}{c_1} - R^* R \right) g_j, g_i \rangle \\
&= \quad \sum \bar{a}_i a_j \left[\frac{c_2}{c_1} \langle g_j, g_i \rangle - w_i \bar{w}_j \langle g_j, g_i \rangle \right] \\
&= \quad \frac{c_2}{c_1} \| \sum a_i g_i \|^2 - \| \sum a_i \bar{w}_i g_i \|^2 \\
&\geq \quad \frac{c_2}{c_1} c_1 \sum |a_i|^2 - c_2 \sum |a_i|^2 \\
&\geq \quad 0.
\end{aligned}$$

Therefore by the Pick property, there is a multiplier ϕ of norm at most $\sqrt{\frac{c_2}{c_1}}$ such that $\phi(\lambda_i) = w_i$ on any finite subset of the $\{\lambda_i\}$. Passing to a weak-star limit, one gets that this holds on the whole sequence $\{\lambda_i\}$. As the sequence (w_i) is arbitrary, $\{\lambda_i\}$ is an interpolating sequence.