TABLE V
THE INFLUENCE OF HYPERPARAMETERS ON THE PROPOSED MODEL ON RASPBERRY PI 4B WITH Z-ZERO NORMALIZATION

Layers	Hiddens	CC	Params(MB)	Infer(ms)	Power(W)
1	128	0.8128	1.49	36.38	2.74
2	128	0.8177	2.95	65.99	2.80
3	128	0.8183	4.40	136.38	2.85
1	64	0.8116	0.75	28.04	2.55
2	64	0.8148	1.48	52.96	2.60
3	64	0.8190	2.24	77.99	2.65
1	32	0.8098	0.39	24.76	2.28
2	32	0.8156	0.76	51.38	2.40
3	32	0.8154	1.13	67.79	2.46

1. Hiddens represent the embedding dimension of sEMG signals, for example, from12×200 to 128 ×200; Layers represent the layers of encoder-decoders.
2. The inference time and the amount of parameters is tested under the conditions of: The batch_size is set to 1 and the window length is set to 200.

Table V shows the influence of hyperparameters Layers and Hidders on the proposed model. To evaluate the impact of different hyperparameters, we conducted a set of ablation experiments on a Raspberry Pi 4B. PCC, model size, inference time and power consumption are used as metrics to evaluate the influence of different hyperparameters. The experimental results show that when using Layers=3 and Hidden=64, our model achieved the highest PCC, although the inference time was slower at 77.99 ms. Conversely, when using layers=1 and hidden=32, our model had the fastest inference speed and the lowest power consumption, but PCC is not as good as the best result, with a 0.92\% drop in PCC. With random combination of Hyperparameters, the average PCC of our model is above 0.8, which outperforms that of TCN and is comparable to that of RNN series models, and at same time, the efficiency of the proposed model is much higher than that of the present models, which making it promising in many real applications.