A simultaneous confidence band (SCB) for the cumulative distribution function (cdf) of a random variable can be used to assess the statistical uncertainty of the estimated cdf. Cheng and Iles (1983) presented a general approach of constructing an SCB for the cdf of a continuous random variable derived from a $100(1-\alpha)\%$ simultaneous confidence region (SCR) for the parameters of the distribution. The Cheng and Iles SCB procedure includes the true cdf with probability at least $(1-\alpha)$. This paper identifies the conditions under which the coverage probability for the SCB procedure is exactly $(1-\alpha)$. A small simulation illustrates the important theoretical results in the paper.