

Letters

Corrections to “A Generalized Theory of Tapered Transmission Line Matching Transformers and Asymmetric Couplers Supporting Non-TEM Modes”

Protag Pramanick and Prakash Bhartia

The above paper¹ contains four typographical errors. Equation (18) should read

$$F(\bar{u}) = \ln(\bar{Z}_L) \frac{\cos[\pi\sqrt{\bar{u}^2 - \bar{u}_0^2}]}{\cosh(\pi\bar{u}_0)}.$$

Equation (23) should read

$$\Phi\left(\frac{\theta}{\pi\bar{u}_0}, \pi\bar{u}_0\right) = \frac{1}{\pi\bar{u}_0} \int_0^\theta \frac{I_1\left[\pi\bar{u}_0 \sqrt{1 - \left(\frac{x}{\pi\bar{u}_0}\right)^2}\right]}{\pi\bar{u}_0 \sqrt{1 - \left(\frac{x}{\pi\bar{u}_0}\right)^2}} dx.$$

In equation (28) one should read

$$b_n = \frac{0.5x(1-x^2)^n + 2nb_{n+1}}{(2n+1)}.$$

In equation (34) one should read

$$N = (4/\pi)(b/a)(1 + 0.2\sqrt{b/a}).$$

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¹P. Pramanick and P. Bhartia, *IEEE Trans. Microwave Theory Tech.*, vol. 37, pp. 1184–1191, Aug. 1989.

Comments on “Parallel Processing Application to Nonlinear Microwave Network Design”

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In the above paper¹ Fig. 6 shows a speedup curve for a network of Transputer processors and apparently is a plot of the data given there in Table I. Could the authors please explain

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¹M. I. Sobhy and Y. A. R. El-Sawy, *IEEE Trans. Microwave Theory Tech.*, vol. 37, pp. 2067–2073, Dec. 1989.

TABLE I
SOLUTION TIME FOR AMPLIFIER EXAMPLE USING T800 TRANSPUTERS

Number of Transputers	Time s	Efficiency η
1	1.6	
2	1.08	74%
3	0.85	63%
4	1.0	40%

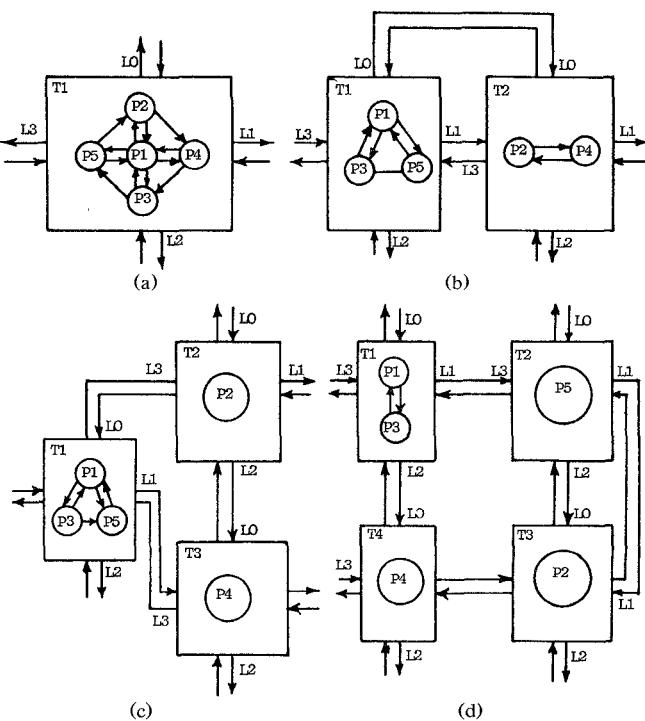


Fig. 1. Configuration of the main processes over (a) one Transputer, (b) two Transputers, (c) three Transputers, and (d) four Transputers. T1–T4 denote the Transputers, P1–P5 the processes, and L0–L3 the links.

how the data shown support their summarized result in Section IX, where they state that “the addition of more Transputers will also reduce the computational time.”

An additional aspect that is unclear is the extent to which the configuration of the Transputer network and/or the task sharing of the Transputers was different in the different cases in Fig. 6/Table I. In particular, how did the network in Fig. 5 differ for the different cases of Fig. 6/Table I? To what extent are the processes of Fig. 4 allocated to the Transputers in each of the cases of Fig. 6/Table I?

Finally, is it correct to assume that the Transputers were on commercially available mass-produced boards and that the OCCAM software used was a standard (as opposed to custom) language package? If the authors would please provide some more details on these aspects it might be of great interest to the MTT community.

The authors are to be congratulated for presenting an intriguing paper on an interesting topic.