

NETWORKS LAB (EE 351)

EXPERIMENT.1

OBJECTIVE: Verification of parameter properties in inter connected two port networks (series, parallel & cascaded).

EQUIPMENT: ammeter, voltmeter, power supply, 2- port networks

CIRCUIT DIAGRAM:

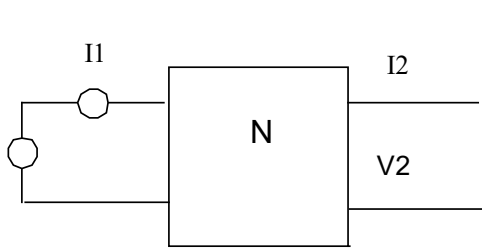


Fig.1

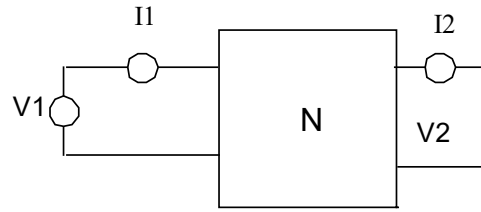


Fig.2

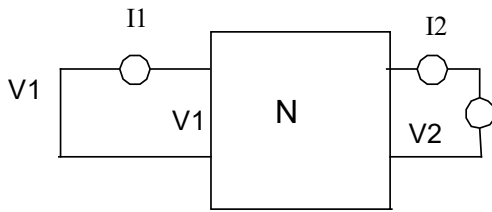


Fig.3

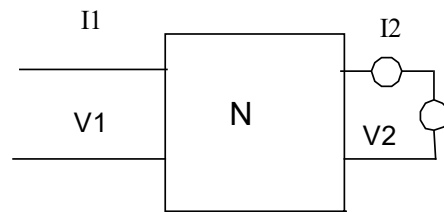


Fig.3

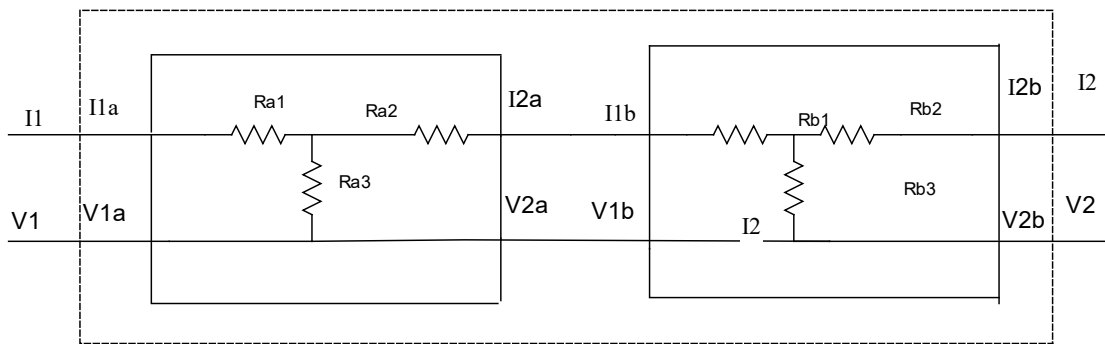


FIG A.

PROCEDURE:

For cascade connection

1. Connect a single two port network as shown in figure1.

2. With port two open excite port one and note down the reading of two port voltage, port one voltage & current as shown in figure 1.
3. By short circuiting the port -2 excite port- 1 and note down the reading of port two current port-1 voltage current as shown in fig.2.
4. Connect the second two port network and repeat the above step.
5. Now by connecting both the above networks as shown in fig. A repeat the above steps.
6. After computing the A,B,C D parameter for all the networks verify the relation

$$T = T_a * T_b$$

For parallel connection:

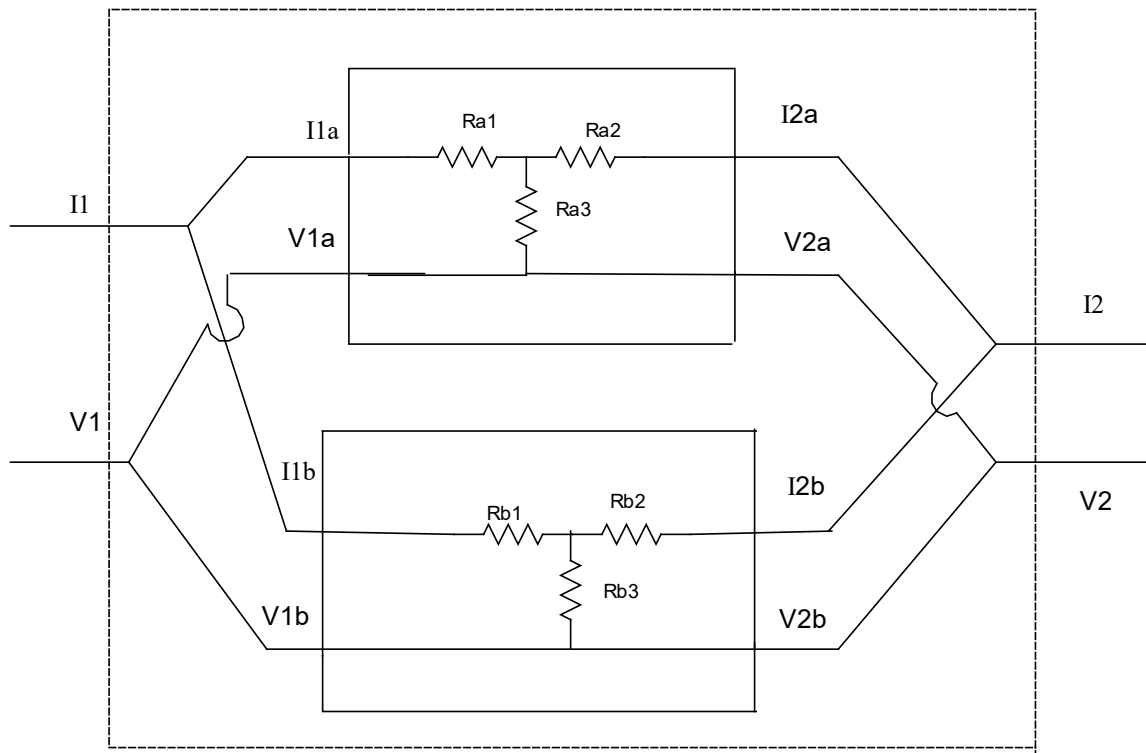


FIG B

7. For a single network, by short circuiting port-2 excite port- 1 and note the reading of port – 1 current as shown in fig.2

8. By short circuiting port 1 excite port -2 and note the reading of port-2 voltage current and port-1 current as shown in fig .3.

9. Repeat the above steps for second network.

10. Now connect both the network in parallel, as shown in fig. and repeat the above steps. After computing y-parameter for all the network verifies the relation: $Y=Y_a+Y_b$

12. for a single network ,keep port-2 open and excite port- 1 and note down the reading of port – 1 voltage ,current and port 2 voltage as shown infig.1

13.now keep port 1 open and by exciting port -2 and note the reading of port-2 voltage current and port-1 voltage as shown in fig .4

14. Repeat the above steps for second network. And note down the readings.

15. Now connect both the network in series, as shown in fig. and repeat the above steps. After computing z-parameter for all the network verify the relation: $Z=Z_a+Z_b$

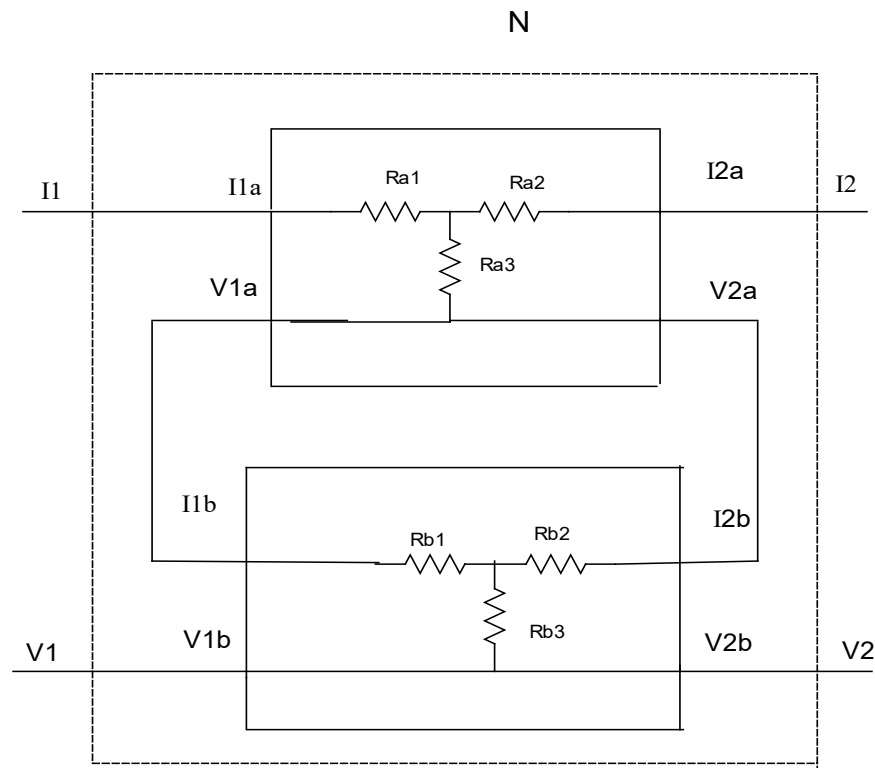


FIG C

