The TEC Model S-501 TV Antenna MULTICOUPLER is designed to permit the connection of up to 8 extra television or FM receivers to one ordinary television antenna. As many as three MULTICOUPLERS may be connected in cascade to one antenna lead, operating up to a total of 24 receivers from one antenna. The MULTICOUPLER itself will cause no interaction between operating sets since there is an attenuation of the order of a million times between sets through this unit. However, the television signal from the antenna to any receiver is received practically undiminished.

INSTALLATION - To place in operation, plug into a 117 volt 60 cycle AC power outlet. Throw switch up to "ON" position. The MULTICOUPLER is extremely versatile and may be connected to various combinations of 300 and 75 ohm TV receivers and antennas to fit each particular installation. Make connections to the terminal board on the rear of the MULTICOUPLER as follows:

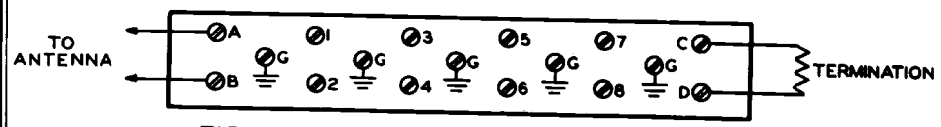

FIG. 1 TERMINAL BOARD CONNECTIONS

A: Four 300 ohm receivers
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms C-D
Receivers connect to 1-2, 3-4, 5-6, 7-8

B: Four 75 ohm receivers
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms C-D
Connect straps between 1-3, 2-4, 5-7, 6-8
Receivers connect to 1, 3 and G; 2, 4 and G; 5, 7 and G; 6, 8 and G

C: Two 300 ohm and two 75 ohm receivers
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms C-D
Connect straps between 1-3 and 2-4
300 ohm receivers connect to 5-6 and 7-8
75 ohm receivers connect to 1, 3 and G; 2, 4 and G

D: Three 300 ohm and two 75 ohm receivers
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms C-D
300 ohm receivers connect to 1-2, 3-4, 5-6
75 ohm receivers connect to 7-G; 8-G

E: Eight 75 ohm receivers from 75 ohm transmission line
Connect straps between A-B and C-D
Antenna input through 75 ohm transmission line A, B and G
Termination, 75 ohms C, D and G
75 ohm receivers connect to 1-G; 2-G; 3-G; 4-G; 5-G; 6-G; 7-G; 8-G

F: Eight 75 ohm receivers from 300 ohm transmission line
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms C-D
75 ohm receivers connect to 1-G; 2-G; 3-G; 4-G; 5-G; 6-G; 7-G; 8-G

G: Hi and Lo Frequency Antennas
Connect Hi band antenna through 300 ohm transmission line to A-B
Connect Lo band antenna through 300 ohm transmission line to C-D
Receivers and strap connections as above (A) through (E)
For 75 ohm transmission line connect as in (F) using Lo band antenna through 75 ohm transmission line in place of 75 ohm termination at C, D and G
Best results obtained with at least 50 feet of transmission line from each antenna to MULTICOUPLER. No switching required.

H: Cascade operation, up to 3 MULTICOUPLERS
Antenna input as above (A) through (G)
Connect C, MC 1 to A, MC 2; D, MC 1 to B, MC 2
Use termination at C-D, MC 2 as above (A) through (G). See Fig. 2.
Third MULTICOUPLER may be added in a similar fashion.

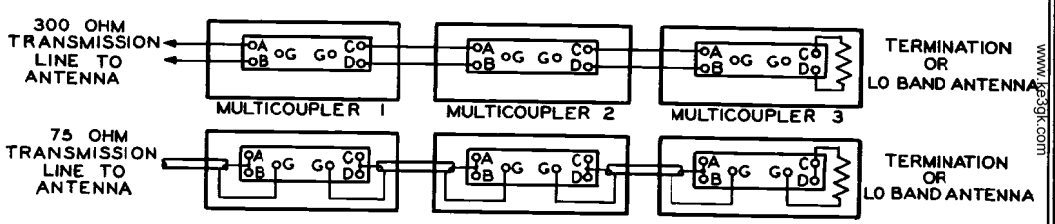

FIG. 2 MULTICOUPLER CASCADE OPERATION

Dress all transmission lines away from each other to prevent capacitive pickup which may cause interaction between receivers.

OPERATING NOTES - The TEC Model S-501 TV Antenna MULTICOUPLER is recommended for use whenever one ordinary television antenna will give good reception with a single television receiver. The MULTICOUPLER does not increase the signal received at the television receiver, but provides a small insertion loss. It is not recommended for use in marginal signal areas. In all installations, however, particular attention should be given to a good antenna, since it provides the basis for satisfactory reception everywhere. Maximum height, careful placement and orientation are prerequisites for all locations. After installation of the MULTICOUPLER, the picture should be observed on each receiver, and the effect of reversing the antenna transmission line and receiver transmission line connections noted for 300 ohm line. The position which gives the best picture should be retained. The circuit is protected by a Type 8AG 1/2 ampere fuse. To replace, remove AC plug from outlet, remove two screws on each side of terminal board on rear of unit, remove back cover and replace fuse. To renew pilot lamp, remove four screws on top and bottom of unit, slide entire chassis out and replace with No. 44 pilot lamp. The MULTICOUPLER is carefully designed and all parts are conservatively rated. An occasional tube replacement will normally constitute all the maintenance required on the unit. Any good brand of 6AK5 tube is suitable. A weak signal received on one receiver while all other receivers are functioning normally is an indication of a tube requiring replacement in the circuit feeding the receiver in question. A poorly designed receiver in close proximity to another receiver may case interference by direct chassis radiation. This does not go through the MULTICOUPLER, since it would occur without any antenna connection to the subject receivers. A greater separation between receivers will minimize this condition.

SUPPLEMENTARY OPERATING INSTRUCTIONS - MODEL S-501 - MULTICOUPLER

I. Eight 300 ohm receivers

In addition to the eight terminal board connections described in the Operating Instructions, it is possible to connect eight 300 ohm receivers to a MULTICOUPLER, as follows:

(a) Eight 300 ohm receivers from 75 ohm transmission line
Connect straps between A-B and C-D
Antenna input through 75 ohm transmission line A, B and G
Termination, 75 ohms C, D and G
300 ohm receivers connect to 1-G; 2-G; 3-G; 4-G; 5-G; 6-G; 7-G; 8-G
Try reversal of 300 ohm leads for best reception in each case.

(b) Eight 300 ohm receivers from 300 ohm transmission line
Antenna input through 300 ohm transmission line A-B
Termination, 300 ohms, C-D
300 ohm receivers connect to 1-G; 2-G; 3-G; 4-G; 5-G; 6-G; 7-G; 8-G
Try reversal of 300 ohm leads for best reception in each case.

II. Reduction of Interference

Field experience has shown that in certain reception areas where high interference is prevalent, it is desirable to provide the greatest possible received signal to minimize interference. Particular hints in this regard are:

(a) Use the highest gain antenna system, and use 75 ohm shielded coax for the transmission line.
(b) When using 300 ohm balanced receivers with 300 ohm antenna transmission line, better results may be obtained by grounding one side of the 300 ohm termination at C or D.
(c) In the case of 75 ohm receivers with 75 ohm transmission line, an increased signal may be obtained by operating outputs in parallel. This is illustrated by using hookup scheme "E" for four sets only, by using pairs as follows: 1, 2 and G; 3, 4 and G; 5, 6 and G; 7, 8 and G.
(d) Where only 2 or 3 channels are required in weak signal areas, boosters may be used, connected the same as for Hi - Lo antennas in scheme "G".

III. Interaction between Sets

Some television receivers interact with others, due to poor design and high local-oscillator radiation. This is not the fault of the MULTICOUPLER, and can be minimized only by the use of fully shielded 75 ohm or 300 ohm cables whose sheath is adequately grounded. Sets which radiate directly from their chassis should be placed as far as possible from others, at least 30' apart. In any case, interaction may always be minimized by increasing the received signal.