



**Clairtone Stereo Multiplex Adapter Models MA-010 & MA-015**

# PARTS LIST

## Multiplex Adapter

Circuit Loc.	Part No.	Description
D1, D2	78-270325-1	Diode IN34A
D3	78-254566-1	PT5 Silicon Rectifier
	75-270327-1	Power Transformer
R8	33-270321-1	Potentiometer, 50K, Linear 10%
L1	M.S. 34179-2	Filter—E1191139 AX
L6	M.I. 34253-2	Band Filter—E1191152 AX
L5	M.S. 34183-2	Doubler Coil—E1191143 AX
L4	83A270330-1	19 kc/s Oscillator Coil
L3	83A270331-1	19 kc/s Pilot Take Off
SW1	58-254780-1	Slide Switch SPST
C15	32-270324-1	Condensers, Durez Dipped ± 10% .01 mfd
C16	32-270324-2	Condensers, Durez Dipped ± 10% 1000 mmfd
C17	32-270324-3	Condensers, Durez Dipped ± 10% 1500 mmfd
C6	32-270324-4	Condensers, Durez Dipped ± 10% 2700 mmfd
C10, 11, 12	32-250950-59	Disc Capacitors 1000 mmfd ± 10% 500v
C4	32-200044-9	Disc Capacitors 220 mmfd ± 10% 500v
C1	32-250950-76	Disc Capacitors 7 mmfd ± 10% 500v*

Circuit Loc.	Part No.	Description
C7, 24	32-250-950-57	Disc Capacitors 680 mmfd ± 10% 500v
C14	32-250950-50	Disc Capacitor 330 mmfd ± 20% 500v
C5, C13	32-250950-75	Disc Capacitor .05 mfd ± 20% 500v
C8, C9	32-253659-6	Capacitor Tubular .1 mfd 200v±20%†
C3	32-254587-11	Electrolytic 1.0 mfd 150v‡
C21, 22, 23	32-254599-13	Electrolytic 50 + 50 + 50 300v
R14, 15, 16, 17	33-254807-5	Resistor 75K ± 1%
R27	33-15633	Resistor 560 ohm ½w ± 10%
R2, R21	33-42233	Resistor 220K ½w ± 10%
R1	33-48333	Resistor 330K ½w ± 10%
R5	33-21533	Resistor 1.5K ½w ± 10%
R4	33-12733	Resistor 270 ohm ½w ± 10%
R26	33-21035	Resistor 1K ½w ± 20%
R7, 9, 13, 23	33-31033	Resistor 10K ½w ± 20%
R10	33-41033	Resistor 100K ½w ± 20%
R18	33-41533	Resistor 150K ½w ± 20%
R11	33-22233	Resistor 2.2K ½w ± 20%
R19, 22	33-21033	Resistor 1K ½w ± 20%
R6, 12	33-33333	Resistor 33K ½w ± 10%
R20	33-34733	Resistor 47K ½w ± 10%
R3	33-44733	Resistor 470K ½w ± 10%

\* Schematic shows 75 mmfd

† Schematic shows 02 μf

‡ Schematic shows 4 μfd

## TEST SPECIFICATION AND ALIGNMENT PROCEDURES FOR MULTIPLEX ADAPTER MA-010 & MA-015

### Equipment required:

Multiplex Stereo Generator (Scott Type 830 or equivalent.)

Oscilloscope with low capacity (20pf max.) probe and frequency response to 100 kc/s.

Audio generator with balanced output (Hewlett-Packard or equivalent.)

- Plug adapter into power supply (respectively AC line) and allow a min. of 5 minutes warm-up.
- Connect oscilloscope probe (low "C") to junction of the two diodes IN34A. Oscilloscope on external sweep from Scott generator (19Kc).  
No input to adapter. Adapter switch in fringe position. Adjust oscillator until Lissajou comes to standstill.
- Scope to internal sweep. 19Kc signal from Scott generator to input of adapter. Probe on same point as in 2. Adjust 38Kc/s doubler coil for maximum
- Scope to external (19Kc) sweep as in 2.  
No signal to input of adapter.  
Check that oscillator frequency is unchanged, and correct if required.
- Probe on pin #2 of 12AT7. Short pin #7 of 12AT7 to ground. 19Kc/s signal from Scott generator to input of adapter.  
Adjust 19Kc/s take-off coil for maximum.
- Pin #7 of 12AT7 still grounded. Probe (low "C") at junction of diodes IN34A's.  
Input to adapter 67.5 Kc/s.  
Adjust Bandpass filter (Bottom coil) for minimum.  
Input to adapter 38 Kc/s.  
Adjust Bandpass filter (top coil) for maximum.
- Input to adapter: "Left" channel composite signal ("+" L", "Right" = 0.)  
Modulation frequency 1000 C/s. Probe on output "R" of adapter.

Local — fringe switch in "fringe" position.

Adjust output for minimum by adjusting potentiometer. If proper minimum cannot be obtained by adjusting potentiometer, a slight adjustment of the 19 Kc/s take-off coil will be required.

- Check that minimum output is maintained by switching input to "+R" "L-O" and probe to output "L" on adapter.
- Check that no phase shift occurs by switching, "local-fringe" switch to local position. Amplitude of output should decrease. If the amplitude of the output increases, the following should be checked:
  - oscillator frequency as in 2.
  - minimum adjust as in 7.
- Calibrate oscilloscope using input signal to adapter as reference. Check output of adapter (maximum channel). Gain must be +3 db.
- Check stereophonic separation by taking ratio of "R" and "L" outputs. Ratio must be 10 times minimum. (Modulation 1000 c/s.)

