AMPLIFIER SPECIFICATIONS

MODEL NO. TBA-2 PROJECT NO. 526-207-700646 DATE 7/7/64

Notes: 1) These are minimum acceptable specifications for production. An Engineering Change Order is necessary when units fail to meet these requirements.
2) Insert "N.A." to mean Not Applicable.
3) Specifications superscripted "3" may be checked on a sample basis unless otherwise indicated.

Band Width 54 - 216 MC.

Min. Full Gain 26 db (each of 2 outputs) @ 216 MC

Flatness ± 1/2 db

Skirt Sharpness ---

Gain Control; Type & Performance 5 db variable with plug-in pad.

Insertion Loss 3/4 db Max.

Tilted Thru Cable 8 db at 216 MC/S; Type Cable Tilt control ±3 db (6 db of cabl

Minimum Full Gain Output[3] 41dbj (per Ch. for 9 Ch.)

for 0.15 % (-57 db) Cross Mod. 43dbj (per ch. for 9 ch. w/ block tilt)

Maximum Full Gain Noise Figure [3] 22 db @ Ch. 13, 32 db @ ch.2

Ripple - (P to P Volts) [3] 10 MV

Impedance At Terminal	Ohms	Bandwidth	Max. VSWR	Min. Ret. Loss, DB
J-2,3,4,&5	75	54 - 216 MC.	1.23:1	20
J-6 and J-7	75	54 - 216 MC.	1.38:1	16

AMPLIFIER OPERATIONAL INFORMATION

MODEL NO. TBA-2 PROJECT NO. 526-207-700646 / DATE 7/7/64

~~TUBE COMPLEMENT~~

RECOMMENDED OPERATING LEVELS WITH TYPICAL CONDITIONS AT THESE LEVELS

GAIN 24db @ 216 MC

INPUT LEVEL 19 dbj @ 216 MC

NOISE FIGURE 24 db @ Ch. 13, 34 db @ Ch.2

OUTPUT LEVEL 42 dbj

DISTORTION 0.15 % (-57db) per Ch. for 12 Ch. (Block Tilt)

POWER REQUIRE ☐ INT. 19 - 30 VAC ☒ EXT.

PRIMARY 19-30 VOLTS; 60 CYCLES; 0.4 AMPS; 12 WATTS

SECONDARY _____ VOLTS _____ M.A.

_____ VOLTS _____ M.A.

_____ VOLTS _____ M.A.

_____ _____

REGULATOR (TYPE) Voltage- Regulated, Current- Limiting -17 VDC

MECHANICAL SPECIFICATIONS

HOUSING (Type) Copper

FINISH Black

OVERALL DIMENSIONS 19" Long x 3½" wide x 2 5/8" Deep

NET WGT. 4 ¼ Lbs.

MOUNTING Rack, wall or deck (optional mtg. Ears)

TECHNICAL DESCRIPTION

DATE July 8, 1964 PAGE 1 OF 1

PROJECT NO. 526-207-700646

UNIT DESIGNATION Solid State Bridging Amplifier, Model TBA-2

Jerrold Model TBA-2 is a solid state intermediate bridging amplifier designed to create feeder lines at locations between mainline amplifiers (TML-1.) Model TBA-2 features a built-in low line loss (3/4 db max.) directional coupler input, a five (5) transistor amplifier, a three (3) transistor internal power supply, and the necessary controls and fittings.

The internal power supply will furnish a -17 VDC at 300 MA. to the amplifier transistors. This voltage-regulated current limiting supply uses zener diode biasing for ultra-stable operation of the power transistors under temperature variations.

The amplifier provides 26 db gain to each of two outputs and has an output capability of 42 db (block tilt) per channel for twelve (12) channels. The response thru cable is flat ± ½db from 54-216 MC. The unit has all the needed controls for midspan operations. The variable tilt control has a 3db range to afford compensation of 6db of cable tilt. The amplifier is aligned for 8 db of cable @ 216 MC. The tilt control provides tilt adjustment for any amplifier location between 8 to 14 db of cable. Coarse gain control is achieved with plug-in-pads, Model PIP (a PIP-0 pad is shipped with each unit) and a fine gain control is variable over a 5 db range.

Each of the output lines is fused so that when the fuse is in place, the 19 to 30 VAC power is fed via the coaxial cable to power line extender Model TLE-1. When no line extender amplifier is used on a line, the particular fuse in the TBA-2 is removed, taking the A.C. off the feeder line.

ALIGNMENT PROCEDURE

DATE July 16, 1964 PAGE 1 OF 5

PROJECT NO. 526-207-700646

UNIT DESIGNATION Solid State Bridging Amplifier, Model TBA-2

NOTE: Alignment procedures should be written in a precise, step-by-step outline form. Block diagrams of test set-ups and sketches of scope presentations should be used to clarify the procedure.

A. VISUAL INSPECTION

1. T2,T3,T4,T5 and T6 ~~leadsdt~~tinned and soldered as close to the ferrite core as possible. The unconnected splice is positioned away from any connecting terminals and the chassis.

2. RT1 is wired such that it's chassis side is wired to the CTC lug which in turn is connected to the chassis ground lug.

3. CR6 is connected with cathode lead aimed toward ground.

4. CR1 and CR2 (1N963) are connected with cathode side aimed away from chassis.

5. Inspect emitter ground on Q7 and Q8 to make sure the collector (case) is not grounded.

6. Inspect C10, C12 and C16 to make sure they have minimum lead length.

7. Inspect C19, and C23 to be sure the positive lead (red or colored end) of electrolytic capacitors are connected to ground.

8. Make sure there are NO fuses in the fuse holders.

B. POWER SUPPLY CHECK

1. Terminate RF Line In (J2), RF Line Out (J3), Out 1 (J6) and Out 2 (J7).

2. Make sure RF / AC Line In (J4) and RF/AC Line Out (J5) are capped prior to testing.

3. Make sure there are no fuses in the fuse holders FS-1 and FS-2.

4. Connect voltmeter between -17 VDC test point and chassis ground. Adjust R36 to maximum clockwise.

NOTE: Alignment procedures should be written in a precise, step-by-step outline form. Block diagrams of test set-ups and sketches of scope presentations should be used to clarify the procedure.

5. Turn on Variac, slowly bring Variac up to 1177VAC to feed 405P and meter the -17 VDC test point. Set B minus exactly to -17VDC with R36, lock R36 with lock nut. Do not allow the test point voltage to exceed -17 VDC. If test point voltage should exceed -17 VDC or power supply does not regulate to -17 VDC shut down immediately and carefully inspect power supply.

C. RF ALIGNMENT (NOTE: USE DUMMY COVER)

1. Preset the tuning adjustments as follows:

   a. R-3, max. Clockwise position.
   b. R-8, max. Counter clockwise position.
   c. R-13, 1/2 turn from max. clockwise position.
   d. C-11, 1/2 turn from maximum clockwise position.
   e. C-13, 1/2 turn from max. clockwise position.
   f. C-21, 1/2 turn from maximum clockwise position.
   g. Slightly spread air coils L-1, L-2, and L-3.

2. Terminate RF Line Out (J3) and Out 2 (J7)

3. Connect unit into sweep response set-up as shown in (Fig. 1.).

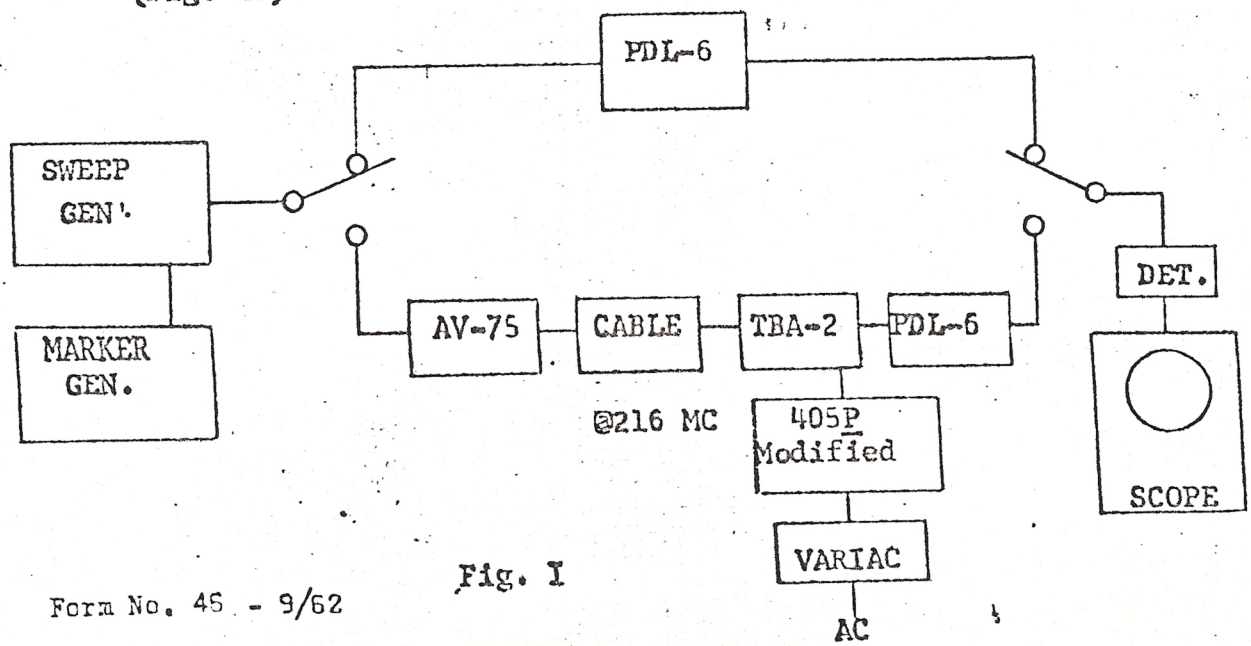

Fig. I

4. Adjust variables R-8, C-11, C-13 and C-21 to give response curve as shown in Fig. II.

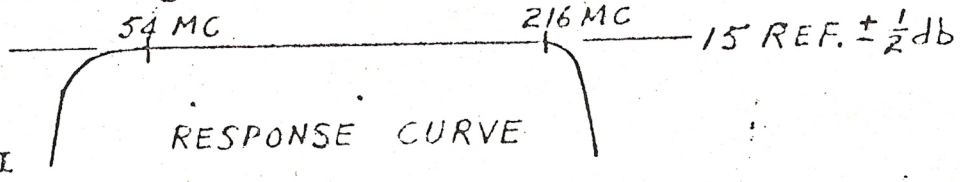

Fig. II

a. C-21 acts like a tilt control. Adjust C-21 counter-clockwise until 216 MC is max. gain.

b. C-13 acts like a gain controland also controls the high frequency cutoff. C-13 and L-3 resonate at 216 MC.

c. C-11 acts like a tilt control. C-11 and L-2 resonate at 216 MC.

d. R-8+L-1 adjusts the roll-off at low frequency end of the response curve.

NOTE: See (Fig. III) for action of the different variables on response curve.

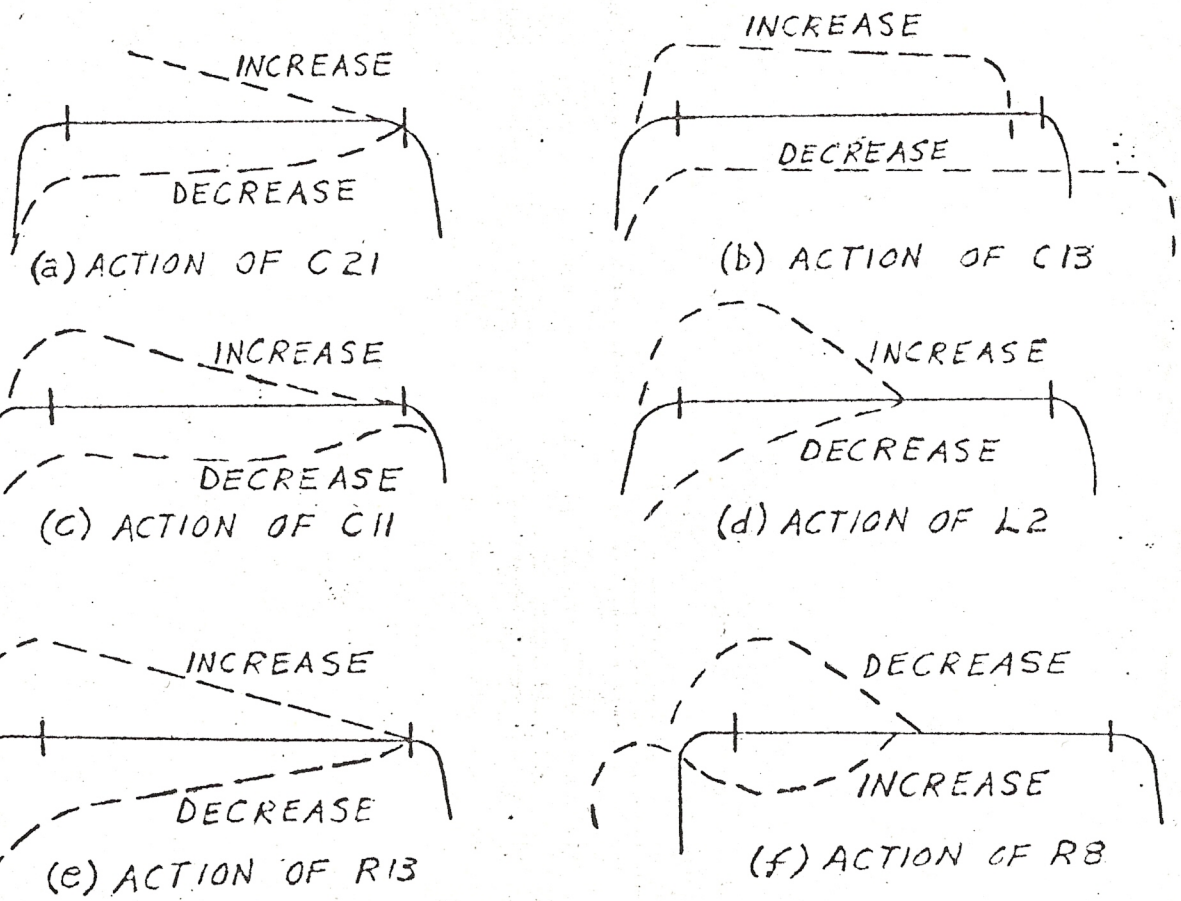

Fig. III

5. Check Gain control (R-3) for 5db gain reduction.

6. Change cable to 14db of cable @ 216 MC and adjust tilt control (R-13) for flat response.

7. Change cable to 8db of cable @ 216 MC and adjust tilt control (R-13) for flat response.

NOTE: If the tilt control does not achieve a flat response at both ends, 8 and 14 db of cable, set up step 7 and adjust R-13 maximum clockwise position. Adjust C-11 to give flat response. Recheck range of the tilt control.

D. MATCH CHECK

1. Input match: Power off. R-3 Maximum clockwise position.

a. Terminate Line Out (J3 or J5) in 75Ω.
b. Check match of Line In (J2 and / or J4).
c. Terminate Line In (J2 or J4) in 75Ω.
d. Check match of Line Out (J3 and / or J5).
e. Replace caps on RF/AC Line In (J4) and RF/AC Line Out (J5).

2. Output match: Power On, terminate RF Line In (J2) and RF Line Out (J4).

a. Terminate Out 2 (J7) in 75Ω.
b. Check match of Out 1 (J6).
c. Terminate Out 1 (J6) in 75Ω.
d. Check match of Out 2 (J7).

NOTE: Noise and air signal pick-up may cause the base Line to rise. If base line rise is sufficient to seriously impare output match check, short Q6 collector to ground with an insulated shorting rod and use a 14db minimum match rated spec.

E. MAIN LINE INSERTION LOSS

1. Using a standard sweep set-up for measuring insertion loss, sweep through the TBA-2 from Line In (J2) to Line Out (J3) with power off, the insertion loss at 216 MC should be a maximum of 0.75 db.

ALIGNMENT PROCEDURE

DATE 7/31/64 PAGE 5 OF 5

PROJECT NO. 526-204-700646

UNIT DESIGNATION TBA-2

NOTE: Alignment procedures should be written in a precise, step-by-step outline form. Block diagrams of test set-ups and sketches of scope presentations should be used to clarify the procedure.

F. Output Isolation

1. Check output isolation with power on.
2. Using a standard sweep response setup with the addition of a broadband post amp. sweep through the TBA-2 from Out 1 to Out 2 and check the isolation. The isolation should be 10 db minimum from 54 mc to 216 mc.