ALIGNMENT PROCEDURE
for
TELESET MODEL
RA-111A
Putnam Guilford

ALLEN B. DU MONT LABORATORIES, INC.
TELESET SERVICE CONTROL DEPT.
MARKET STREET, EAST PATerson, NEW JERSEY
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ALIGNMENT SET-UP

1. Keep all coax cables as short and as well shielded as possible.

2. Ground metal bench to a good earth ground.

3. To test set-up feed signal into grid of mixer thru a 100 mmf condenser. If placing hand on any chassis or adding additional grounds at any point affects waveform or if Teleset has a tendency to oscillate, grounding must be added until these effects disappear.

RA 111-A

NOTES:

1. Unmodulated and amplitude modulated RF should cover 20 to 30 mc range. Also 4.5 mc. Not necessary if marker is built into sweep frequency generator.

2. Should have center frequency range from 20 to 30 mc. Sweep should be adjustable up to 6 mc at least.

3. We recommend use of internal saw-tooth sweep. Waveforms shown were taken using this sweep. External sweep from sweep frequency generator may be used if preferred.
### ALIGNMENT TABLE

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pin 1 V208</td>
<td>21.9, 22.4</td>
<td>24 mc. 8 mc. dev. min.</td>
<td>Junction L201, L202, L203</td>
<td>1 DIR</td>
<td>Z208</td>
</tr>
<tr>
<td>2</td>
<td>Pin 1 V207</td>
<td>21.9 AM mod.</td>
<td>Not used</td>
<td>Pin 5 V208 thru crystal probe</td>
<td>2 GP</td>
<td>L212</td>
</tr>
<tr>
<td>3</td>
<td>As above</td>
<td>22.4, 22.9</td>
<td>24 mc. 8 mc. dev. min.</td>
<td>As above</td>
<td></td>
<td>Z207</td>
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<tr>
<td>4</td>
<td>Pin 1 V206</td>
<td>21.9, 22.4</td>
<td>As above</td>
<td>Pin 5 V207 thru crystal probe</td>
<td>3 GP</td>
<td>Z206</td>
</tr>
<tr>
<td>5</td>
<td>Pin 1 V205</td>
<td>21.8, 21.9</td>
<td>21.9 mc. 1 mc. dev. min.</td>
<td>Pin 5 V201 thru crystal probe</td>
<td>4 GP</td>
<td>Z201</td>
</tr>
<tr>
<td>6</td>
<td>As above</td>
<td>22.4, 22.9</td>
<td>24 mc. 8 mc. dev. min.</td>
<td>Pin 5 V206 thru crystal probe</td>
<td>5 GP</td>
<td>Z205</td>
</tr>
<tr>
<td>7</td>
<td>Pin 1 V102 Note 6</td>
<td>27.9 AM mod.</td>
<td>Not used</td>
<td>Pin 5 V205 thru crystal probe</td>
<td>6 GP</td>
<td>Top Z204</td>
</tr>
<tr>
<td>8</td>
<td>As above</td>
<td>21.9, 22.4</td>
<td>24 mc. 8 mc. dev. min.</td>
<td>As above</td>
<td></td>
<td>Bottom Z204, Top T202</td>
</tr>
<tr>
<td>9</td>
<td>Pin 1 V201</td>
<td>21.8, 21.9</td>
<td>21.9 mc. 1 mc. dev. min.</td>
<td>Pin 5 V202 thru crystal probe</td>
<td>7 GP</td>
<td>Z202</td>
</tr>
<tr>
<td>10</td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
<td>Junction R211 and C270 direct</td>
<td>8 DIR</td>
<td>Z203</td>
</tr>
<tr>
<td>11</td>
<td>Pin 1 V208</td>
<td>25.65, 26.4</td>
<td>24 mc. 2 mc. dev. min.</td>
<td>Pin 1 V219, direct. Note 2</td>
<td>9 DIR</td>
<td>Z209</td>
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<tr>
<td>12</td>
<td>Pin 7 V209</td>
<td>4.5 AM mod.</td>
<td>Not used</td>
<td>CRT cathode thru crystal probe</td>
<td>10 GP</td>
<td>L203</td>
</tr>
</tbody>
</table>

13 Remove V213 and adjust AGC potentiometer, R250, so that VTVM on pin 2 of V213 reads 18 volts with no signal.

14 Replace original tubes.
PRELIMINARY STEPS

CAUTION: IT IS IMPORTANT THAT ALL NOTES BE READ IN CONJUNCTION WITH ALIGNMENT.

1. The following preliminary steps should be followed:
2. Remove 6W4 (V217) damper, 6AK5 (V102) mixer, 6AB4 (V103) oscillator and 6AQ5 (V204) AF output (note 1).
3. Remove 6AU6 (V219) synch amp. and replace with 6AU6 adapter (note 2).
4. Remove 6AK5 (V102) mixer and replace with 6AK5 adapter (note 6).
5. Adjust AGC control (R250) fully counter-clockwise.
6. Turn selector switch to tele. position.

ALIGNMENT NOTES

1. 6AQ5 (V204) may be left in position only if speaker is connected.
2. Insert 6AU6 adapter at V219. This is a 6AU6 with pins 3 & 4 clipped off and an extension attached to pin 1.
3. If the sweep generator has no internal marker, a signal generator may be connected to the output cable of the sweep generator through a 100 mmf condenser to act as a marker generator.
4. Du Mont Telesets are designed to receive television and high fidelity FM and must, therefore, be aligned with full FM bandwidth requirements.
5. The use of two alignment tools simultaneously will facilitate the alignment procedure.
6. Insert 6AK5 adapter at the mixer, V102. This adapter is a 6AK5 with pin 1 clipped off and an extension attached to the remainder of pin 1, as shown.

7. The bandwidth of the 1st stage of video IF is controlled by a coupling loop in the mixer transformer, T202. This is adjusted and sealed in position at the factory and should not be touched. However, in case of replacement of the tuner, it should be adjusted for the curve shown in step No. 8 of the Alignment Table. Steps No. 7 and 8 MAY have to be performed in order to obtain the proper curve. After adjustment, fasten the coupling loop in T202 with Miracle Adhesive C2M55 (obtainable from Du Mont Spare Parts Sales Department).
8. Maximum possible output of the sweep generator should be used, checking for overload.
9. Reference is made in the Alignment Table to the use of a crystal probe. This device is merely a crystal rectifier with the necessary filter.

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PROBE DETECTOR

- 0.01µf
- IN3A CRYSTAL
- 220Ω 1/2W
- 10Ω 1/2W
- 0.01µf
- 0.001µf
- OUTPUT
- RF INPUT
- TO GND