



OTR-3550

**FREQUENCY AGILE - F.C.C. COMPATIBLE
TELEVISION PROCESSOR**

INSTRUCTION MANUAL

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OTR-3550

FREQUENCY AGILE - F.C.C. COMPATIBLE TELEVISION PROCESSOR

1) INTRODUCTION

The Olson Technology OTR-3550 is a frequency agile - F.C.C. compatible television processor. This unit will select any VHF/UHF/cable/HRC and IRC input channel from 55.25MHz to 801.25MHz, and will provide high level (+60dBmV) outputs on any channel from 55.25MHz (channel 2) through 547.25MHz (channel YY). All input channels are selectable in 0.25MHz steps and output channels are selectable in 1MHz steps by front panel DIP switches, including F.C.C. offsets of +12KHz and +25KHz.

The OTR-3550 uses dual SAW filtering for 60dB adjacent channel rejection and has high level spurious free output. This unit also offers the unique Olson Technology feature of >80dB out-of-band carrier to noise ratio, which will allow virtually unlimited numbers of the OTR-3550 to be combined without the need for external bandpass filters. The OTR-3550 is BTSC compatible and will automatically function with stereo or monaural audio carriers.

The OTR-3550 has a low power consumption (17 watts @ 115 VAC) for reliable long term operation. This unit is equipped with a 0.5 amp slo-blo fuse. To maintain proper performance of unit, replace only with equivalent fuse.

2) INPUT CHANNEL SELECTION - DEMODULATOR

Remove the front panel plate marked "Input Channel Select" to expose the channel select and band select DIP switches as shown in Figure 1.

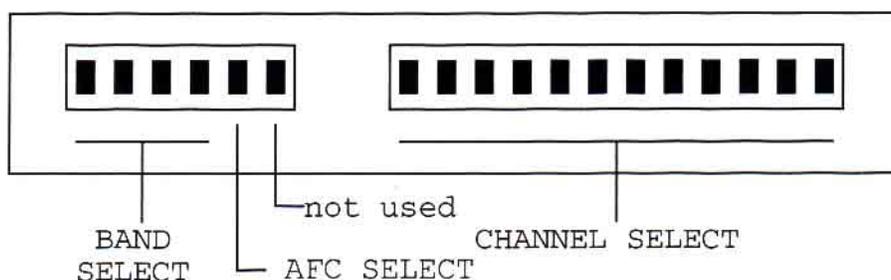


FIGURE 1 - INPUT CHANNEL SELECT

- A) CHANNEL SELECTION - Channel selection is accomplished by properly setting the 12-position DIP switches to the corresponding channel code. Channel codes can be selected from figure #2 or the code card attached to the Input Channel Select cover plate then, set the DIP switches from left to right. For example - If channel 11 is selected, its corresponding channel code is:

0 0 1 0 1 0 1 1 1 1 0 0

0 = Switch in DOWN Position
1 = Switch in UP Position

To select an HRC input channel, utilize the HRC code chart on page 7 of this manual.

CAUTION: Channel codes for input and output channel select are completely different.

- B) **BAND SELECTION** - Band selection is accomplished by setting the 6-position DIP switches to the corresponding band. Only three switches are used for this purpose. Band select codes can be chosen from Figure #2 or the code card attached to the Input Channel Select cover plate. Then, set the DIP switches from left to right. For example - If band A-3 to Channel 13 is desired, its corresponding code is:

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|

- C) **AFC SELECTION** - Most off-air TV stations are usually very close to the specified carrier frequency such that the AFC function need not be used. However, some UHF stations have a tendency to drift, so it is best to utilize the AFC function. Simply set the AFC switch (fifth switch from the left) to the down position for automatic frequency control (AFC "ON"). For example - If AFC is desired on band A-3 to Channel 13, then the set up is:

| | | | | | |
|---|---|---|---|---|---|
| 1 | 0 | 1 | 1 | 0 | 1 |
|---|---|---|---|---|---|

Off-cable processing should not require AFC, but make sure the proper code sheet (Standard Channel or HRC) is utilized.

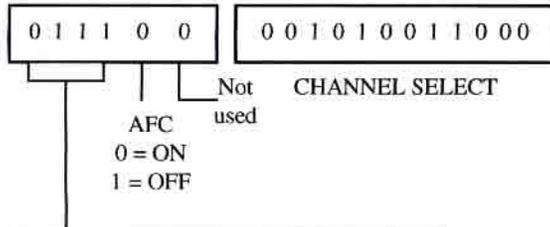
- D) **INPUT CONNECTION** - After an input channel has been selected (Steps A through C), connect an antenna or cable source to the RF input terminal. Any VHF, UHF or cable source can be connected to the RF input connector. For optimum video quality response, the input signal level should have a minimum of +10dBmV. This unit will function with input signal levels as low as -20dBmV. Any signals below -20dBmV will be squelched by the internal squelch circuit.

3) DEMODULATOR AGC ADJUSTMENT

- A) The demodulator delayed AGC adjustment is factory set for a +5 to +10dBmV threshold. This setting provides the best signal-to-noise ratio for low level off-air signals.
- B) For cable operation, where high-level adjacent channel signals may be present, adjacent channel performance may be improved by lowering the AGC threshold level.
- C) To adjust the delayed AGC threshold level for cable operation:
1. Connect a cable signal carrying three adjacent channels at a level of +20dBmV maximum to the RF input connector.
 2. Set the input channel select DIP switches to the channel located in the center carrier frequency (of the three channels).
 3. Adjust the demodulator delayed AGC control (R54) slightly for the least amount of adjacent channel interference.



0 = Switch in DOWN Position
1 = Switch in UP Position



| BAND SELECT | |
|-------------------|---------|
| Ch. 2 to A-4 | 0 1 1 1 |
| Ch. A-3 to Ch. 13 | 1 0 1 1 |
| Ch. J to LL | 1 1 0 1 |
| Ch. MM to UHF 69 | 1 1 1 0 |

NOTE:

DIAGRAM ABOVE DENOTES:

- 1) SELECTED CHANNEL = CH. 2
- 2) BAND SELECT = CH. 2 TO A-6
- 3) AFC = ON (DOWN)

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MADE IN U.S.A.

| CH | FREQ | BAND | DIP SWITCH SET | | |
|--------|--------|------|----------------|------|------|
| 2 | 55.25 | 0111 | 0010 | 1001 | 1000 |
| 3 | 61.25 | 0111 | 0011 | 0101 | 1000 |
| 4 | 67.25 | 0111 | 0010 | 0011 | 1000 |
| 5 | 77.25 | 0111 | 0011 | 0111 | 1000 |
| 6 | 83.25 | 0111 | 0010 | 0000 | 0100 |
| 7 | 175.25 | 1011 | 0010 | 1110 | 1100 |
| 8 | 181.25 | 1011 | 0011 | 0001 | 1100 |
| 9 | 187.25 | 1011 | 0010 | 0101 | 1100 |
| 10 | 193.25 | 1011 | 0011 | 1101 | 1100 |
| 11 | 199.25 | 1011 | 0010 | 1011 | 1100 |
| 12 | 205.25 | 1011 | 0011 | 0111 | 1100 |
| 13 | 211.25 | 1011 | 0010 | 0000 | 0010 |
| A-5 | 91.25 | 0111 | 0010 | 0100 | 0100 |
| A-4 | 97.25 | 0111 | 0011 | 1100 | 0100 |
| A-3 | 103.25 | 1011 | 0010 | 1010 | 0100 |
| A-2 | 109.25 | 1011 | 0011 | 0110 | 0100 |
| A-1 | 115.25 | 1011 | 0010 | 0001 | 0100 |
| 14 (A) | 121.25 | 1011 | 0011 | 1001 | 0100 |
| 15 (B) | 127.25 | 1011 | 0010 | 1101 | 0100 |
| 16 (C) | 133.25 | 1011 | 0011 | 0011 | 0100 |
| 17 (D) | 139.25 | 1011 | 0010 | 0111 | 0100 |
| 18 (E) | 145.25 | 1011 | 0011 | 1111 | 0100 |
| 19 (F) | 151.25 | 1011 | 0010 | 1000 | 1100 |
| 20 (G) | 157.25 | 1011 | 0011 | 0100 | 1100 |
| 21 (H) | 163.25 | 1011 | 0010 | 0010 | 1100 |
| 22 (I) | 169.25 | 1011 | 0011 | 1010 | 1100 |
| 23 (J) | 217.25 | 1101 | 0011 | 1000 | 0010 |
| 24 (K) | 223.25 | 1101 | 0010 | 1100 | 0010 |
| 25 (L) | 229.25 | 1101 | 0011 | 0010 | 0010 |
| 26 (M) | 235.25 | 1101 | 0010 | 0110 | 0010 |
| 27 (N) | 241.25 | 1101 | 0011 | 1110 | 0010 |
| 28 (O) | 247.25 | 1101 | 0010 | 1001 | 0010 |
| 29 (P) | 253.25 | 1101 | 0011 | 0101 | 0010 |
| 30 (Q) | 259.25 | 1101 | 0010 | 0011 | 0010 |
| 31 (R) | 265.25 | 1101 | 0011 | 1011 | 0010 |

| CH | FREQ | BAND | DIP SWITCH SET | | |
|----------|--------|------|----------------|------|------|
| 32 (S) | 271.25 | 1101 | 0010 | 1111 | 0010 |
| 33 (T) | 277.25 | 1101 | 0011 | 0000 | 1010 |
| 34 (U) | 283.25 | 1101 | 0010 | 0100 | 1010 |
| 35 (V) | 289.25 | 1101 | 0011 | 1100 | 1010 |
| 36 (W) | 295.25 | 1101 | 0010 | 1010 | 1010 |
| 37 (AA) | 301.25 | 1101 | 0011 | 0110 | 1010 |
| 38 (BB) | 307.25 | 1101 | 0010 | 0001 | 1010 |
| 39 (CC) | 313.25 | 1101 | 0011 | 1001 | 1010 |
| 40 (DD) | 319.25 | 1101 | 0010 | 1101 | 1010 |
| 41 (EE) | 325.25 | 1101 | 0011 | 0011 | 1010 |
| 42 (FF) | 331.25 | 1101 | 0010 | 0111 | 1010 |
| 43 (GG) | 337.25 | 1101 | 0011 | 1111 | 1010 |
| 44 (HH) | 343.25 | 1101 | 0010 | 1000 | 0110 |
| 45 (II) | 349.25 | 1101 | 0011 | 0100 | 0110 |
| 46 (JJ) | 355.25 | 1101 | 0010 | 0010 | 0110 |
| 47 (KK) | 361.25 | 1101 | 0011 | 1010 | 0110 |
| 48 (LL) | 367.25 | 1101 | 0010 | 1110 | 0110 |
| 49 (MM) | 373.25 | 1110 | 0011 | 0001 | 0110 |
| 50 (NN) | 379.25 | 1110 | 0010 | 0101 | 0110 |
| 51 (OO) | 385.25 | 1110 | 0011 | 1101 | 0110 |
| 52 (PP) | 391.25 | 1110 | 0010 | 1011 | 0110 |
| 53 (QQ) | 397.25 | 1110 | 0011 | 0111 | 0110 |
| 54 (A-8) | 73.25 | 0111 | 0011 | 1011 | 1000 |
| 55 (A-7) | 79.25 | 0111 | 0010 | 1111 | 1000 |
| 56 (A-6) | 85.25 | 0111 | 0011 | 0000 | 0100 |
| 57 (A-5) | 91.25 | 0111 | 0010 | 0100 | 0100 |
| 58 (A-4) | 97.25 | 0111 | 0011 | 1100 | 0100 |
| 59 (A-3) | 103.25 | 1011 | 0010 | 1010 | 0100 |
| 60 (A-2) | 109.25 | 1011 | 0011 | 0110 | 0100 |
| 61 (A-1) | 115.25 | 1011 | 0010 | 0001 | 0100 |
| 62 (RR) | 403.25 | 1110 | 0010 | 0000 | 1110 |
| 63 (SS) | 409.25 | 1110 | 0011 | 1000 | 1110 |
| 64 (TT) | 415.25 | 1110 | 0010 | 1100 | 1110 |
| 65 (UU) | 421.25 | 1110 | 0011 | 0010 | 1110 |
| 66 (VV) | 427.25 | 1110 | 0010 | 0110 | 1110 |

STANDARD CHANNEL CODES FOR OTR-3550

| CH | FREQ | BAND | DIP SWITCH SET |
|---------|--------|------|----------------|
| 67(WW) | 433.25 | 1110 | 0011 1110 1110 |
| 68 (XX) | 439.25 | 1110 | 0010 1001 1110 |
| 69 (YY) | 445.25 | 1110 | 0011 0101 1110 |
| 70 (ZZ) | 451.25 | 1110 | 0010 0011 1110 |
| 71 | 457.25 | 1110 | 0011 1011 1110 |
| 72 | 463.25 | 1110 | 0010 1111 1110 |
| 73 | 469.25 | 1110 | 0011 0000 0001 |
| 74 | 475.25 | 1110 | 0010 0100 0001 |
| 75 | 481.25 | 1110 | 0011 1100 0001 |
| 76 | 487.25 | 1110 | 0010 1010 0001 |
| 77 | 493.25 | 1110 | 0011 0110 0001 |
| 78 | 499.25 | 1110 | 0010 0001 0001 |
| 79 | 505.25 | 1110 | 0011 1001 0001 |
| 80 | 511.25 | 1110 | 0010 1101 0001 |
| 81 | 517.25 | 1110 | 0011 0011 0001 |
| 82 | 523.25 | 1110 | 0010 0111 0001 |
| 83 | 529.25 | 1110 | 0011 1111 0001 |
| 84 | 535.25 | 1110 | 0010 1000 1001 |
| 85 | 541.25 | 1110 | 0011 0100 1001 |
| 86 | 547.25 | 1110 | 0010 0010 1001 |
| 87 | 553.25 | 1110 | 0011 1010 1001 |
| 88 | 559.25 | 1110 | 0010 1110 1001 |
| 89 | 565.25 | 1110 | 0011 0001 1001 |
| 90 | 571.25 | 1110 | 0010 0101 1001 |
| 91 | 577.25 | 1110 | 0011 1101 1001 |
| 92 | 583.25 | 1110 | 0010 1011 1001 |
| 93 | 589.25 | 1110 | 0011 0111 1001 |
| 94 | 595.25 | 1110 | 0010 0000 0101 |
| 95 | 601.25 | 1110 | 0011 1000 0101 |
| 96 | 607.25 | 1110 | 0010 1100 0101 |
| 97 | 613.25 | 1110 | 0011 0010 0101 |
| 98 | 619.25 | 1110 | 0010 0110 0101 |
| 99 | 625.25 | 1110 | 0011 1110 0101 |
| 100 | 631.25 | 1110 | 0010 1001 0101 |
| 101 | 637.25 | 1110 | 0011 0101 0101 |
| 102 | 643.25 | 1110 | 0010 0011 0101 |

| CH | FREQ | BAND | DIP SWITCH SET |
|----------------------|--------|------|----------------|
| 103 | 649.25 | 1110 | 0011 1011 0101 |
| 104 | 655.25 | 1110 | 0010 1111 0101 |
| 105 | 661.25 | 1110 | 0011 0000 1101 |
| 106 | 667.25 | 1110 | 0010 0100 1101 |
| 107 | 673.25 | 1110 | 0011 1100 1101 |
| 108 | 679.25 | 1110 | 0010 1010 1101 |
| 109 | 685.25 | 1110 | 0011 0110 1101 |
| 110 | 691.25 | 1110 | 0010 0001 1101 |
| 111 | 697.25 | 1110 | 0011 1001 1101 |
| 112 | 703.25 | 1110 | 0010 1101 1101 |
| 113 | 709.25 | 1110 | 0011 0011 1101 |
| 114 | 715.25 | 1110 | 0010 0111 1101 |
| 115 | 721.25 | 1110 | 0011 1111 1101 |
| 116 | 727.25 | 1110 | 0010 1000 0011 |
| 117 | 733.25 | 1110 | 0011 0100 0011 |
| 118 | 739.25 | 1110 | 0010 0010 0011 |
| 119 | 745.25 | 1110 | 0011 1010 0011 |
| 120 | 751.25 | 1110 | 0010 1110 0011 |
| 121 | 757.25 | 1110 | 0011 0001 0011 |
| 122 | 763.25 | 1110 | 0010 0101 0011 |
| 123 | 769.25 | 1110 | 0011 1101 0011 |
| 124 | 775.25 | 1110 | 0010 1011 0011 |
| 125 | 781.25 | 1110 | 0011 0111 0011 |
| 126 | 787.25 | 1110 | 0010 0000 1011 |
| 127 | 793.25 | 1110 | 0011 1000 1011 |
| 128 | 799.25 | 1110 | 0010 1100 1011 |
| 129 | 805.25 | 1110 | 0011 0010 1011 |
| UHF OFF-AIR CHANNELS | | | |
| 14 | 471.25 | 1110 | 0010 1000 0001 |
| 15 | 477.25 | 1110 | 0011 0100 0001 |
| 16 | 483.25 | 1110 | 0010 0010 0001 |
| 17 | 489.25 | 1110 | 0011 1010 0001 |
| 18 | 495.25 | 1110 | 0010 1110 0001 |
| 19 | 501.25 | 1110 | 0011 0001 0001 |
| 20 | 507.25 | 1110 | 0010 0101 0001 |
| 21 | 513.25 | 1110 | 0011 1101 0001 |

| CH | FREQ | BAND | DIP SWITCH SET |
|----|--------|------|----------------|
| 22 | 519.25 | 1110 | 0010 1011 0001 |
| 23 | 525.25 | 1110 | 0011 0111 0001 |
| 24 | 531.25 | 1110 | 0010 0000 1001 |
| 25 | 537.25 | 1110 | 0011 1000 1001 |
| 26 | 543.25 | 1110 | 0010 1100 1001 |
| 27 | 549.25 | 1110 | 0011 0010 1001 |
| 28 | 555.25 | 1110 | 0010 0110 1001 |
| 29 | 561.25 | 1110 | 0011 1110 1001 |
| 30 | 567.25 | 1110 | 0010 1001 1001 |
| 31 | 573.25 | 1110 | 0011 0101 1001 |
| 32 | 579.25 | 1110 | 0010 0011 1001 |
| 33 | 585.25 | 1110 | 0011 1011 1001 |
| 34 | 591.25 | 1110 | 0010 1111 1001 |
| 35 | 597.25 | 1110 | 0011 0000 0101 |
| 36 | 603.25 | 1110 | 0010 0100 0101 |
| 37 | 609.25 | 1110 | 0011 1100 0101 |
| 38 | 615.25 | 1110 | 0010 1010 0101 |
| 39 | 621.25 | 1110 | 0011 0110 0101 |
| 40 | 627.25 | 1110 | 0010 0001 0101 |
| 41 | 633.25 | 1110 | 0011 1001 0101 |
| 42 | 639.25 | 1110 | 0010 1101 0101 |
| 43 | 645.25 | 1110 | 0011 0011 0101 |
| 44 | 651.25 | 1110 | 0010 0111 0101 |
| 45 | 657.25 | 1110 | 0011 1111 0101 |
| 46 | 663.25 | 1110 | 0010 1000 1101 |
| 47 | 669.25 | 1110 | 0011 0100 1101 |
| 48 | 675.25 | 1110 | 0010 0010 1101 |
| 49 | 681.25 | 1110 | 0011 1010 1101 |
| 50 | 687.25 | 1110 | 0010 1110 1101 |
| 51 | 693.25 | 1110 | 0011 0001 1101 |
| 52 | 699.25 | 1110 | 0010 0101 1101 |
| 53 | 705.25 | 1110 | 0011 1101 1101 |
| 54 | 711.25 | 1110 | 0010 1011 1101 |
| 55 | 717.25 | 1110 | 0011 0111 1101 |
| 56 | 723.25 | 1110 | 0010 0000 0011 |
| 57 | 729.25 | 1110 | 0011 1000 0011 |

| CH | FREQ | BAND | DIP SWITCH SET |
|----|--------|------|----------------|
| 58 | 735.25 | 1110 | 0010 1100 0011 |
| 59 | 741.25 | 1110 | 0011 0010 0011 |
| 60 | 747.25 | 1110 | 0010 0110 0011 |
| 61 | 753.25 | 1110 | 0011 1110 0011 |
| 62 | 759.25 | 1110 | 0010 1001 0011 |
| 63 | 765.25 | 1110 | 0011 0101 0011 |
| 64 | 771.25 | 1110 | 0010 0011 0011 |
| 65 | 777.25 | 1110 | 0011 1011 0011 |
| 66 | 783.25 | 1110 | 0010 1111 0011 |
| 67 | 789.25 | 1110 | 0011 0000 1011 |
| 68 | 795.25 | 1110 | 0010 0100 1011 |
| 69 | 801.25 | 1110 | 0011 1100 1011 |

STANDARD CHANNEL CODES FOR OTR-3550 (continued)

| HRC CODES FOR OTR-3550 | | | |
|------------------------|--------|------|----------------|
| CH | FREQ | BAND | DIP SWITCH SET |
| 2 | 54.00 | 0111 | 1111 0001 1000 |
| 3 | 60.00 | 0111 | 1110 0101 1000 |
| 4 | 66.00 | 0111 | 1111 1101 1000 |
| 5 | 78.00 | 0111 | 1111 0111 1000 |
| 6 | 84.00 | 0111 | 1110 0000 0100 |
| 7 | 174.00 | 1011 | 1111 0110 1100 |
| 8 | 180.00 | 1011 | 1110 0001 1100 |
| 9 | 186.00 | 1011 | 1111 1001 1100 |
| 10 | 192.00 | 1011 | 1110 1101 1100 |
| 11 | 198.00 | 1011 | 1111 0011 1100 |
| 12 | 204.00 | 1011 | 1110 0111 1100 |
| 13 | 210.00 | 1011 | 1111 1111 1100 |
| A-5 | 90.00 | 0111 | 1111 1000 0100 |
| A-4 | 96.00 | 0111 | 1110 1100 0100 |
| A-3 | 102.00 | 1011 | 1111 0010 0100 |
| A-2 | 108.00 | 1011 | 1110 0110 0100 |
| A-1 | 114.00 | 1011 | 1111 1110 0100 |
| 14(A) | 120.00 | 1011 | 1110 1001 0100 |
| 15(B) | 126.00 | 1011 | 1111 0101 0100 |
| 16(C) | 132.00 | 1011 | 1110 0011 0100 |
| 17(D) | 138.00 | 1011 | 1111 1011 0100 |
| 18(E) | 144.00 | 1011 | 1110 1111 0100 |
| 19(F) | 150.00 | 1011 | 1111 0000 1100 |
| 20(G) | 156.00 | 1011 | 1110 0100 1100 |
| 21(H) | 162.00 | 1011 | 1111 1100 1100 |
| 22(I) | 168.00 | 1011 | 1110 1010 1100 |
| 23(J) | 216.00 | 1101 | 1110 1000 0010 |
| 24(K) | 222.00 | 1101 | 1111 0100 0010 |
| 25(L) | 228.00 | 1101 | 1110 0010 0010 |
| 26(M) | 234.00 | 1101 | 1111 1010 0010 |
| 27(N) | 240.00 | 1101 | 1110 1110 0010 |
| 28(O) | 246.00 | 1101 | 1111 0001 0010 |
| 29(P) | 252.00 | 1101 | 1110 0101 0010 |

| CH | FREQ | BAND | DIP SWITCH SET |
|---------|--------|------|----------------|
| 30(Q) | 258.00 | 1101 | 1111 1101 0010 |
| 31(R) | 264.00 | 1101 | 1110 1011 0010 |
| 32(S) | 270.00 | 1101 | 1111 0111 0010 |
| 33(T) | 276.00 | 1101 | 1110 0000 1010 |
| 34(U) | 282.00 | 1101 | 1111 1000 1010 |
| 35(V) | 288.00 | 1101 | 1110 1100 1010 |
| 36(W) | 294.00 | 1101 | 1111 0010 1010 |
| 37(AA) | 300.00 | 1101 | 1110 0110 1010 |
| 38(BB) | 306.00 | 1101 | 1111 1110 1010 |
| 39(CC) | 312.00 | 1101 | 1110 1001 1010 |
| 40(DD) | 318.00 | 1101 | 1111 0101 1010 |
| 41(EE) | 324.00 | 1101 | 1110 0011 1010 |
| 42(FF) | 330.00 | 1101 | 1111 1011 1010 |
| 43(GG) | 336.00 | 1101 | 1110 1111 1010 |
| 44(HH) | 342.00 | 1101 | 1111 0000 0110 |
| 45(II) | 348.00 | 1101 | 1110 0100 0110 |
| 46(JJ) | 354.00 | 1101 | 1111 1100 0110 |
| 47(KK) | 360.00 | 1101 | 1110 1010 0110 |
| 48(LL) | 366.00 | 1101 | 1111 0110 0110 |
| 49(MM) | 372.00 | 1110 | 1110 0001 0110 |
| 50(NN) | 378.00 | 1110 | 1111 1001 0110 |
| 51(OO) | 384.00 | 1110 | 1110 1101 0110 |
| 52(PP) | 390.00 | 1110 | 1111 0011 0110 |
| 53(QQ) | 396.00 | 1110 | 1110 0111 0110 |
| 54(A-8) | 72.00 | 0111 | 1110 1011 1000 |
| 55(A-7) | 78.00 | 0111 | 1111 0111 1000 |
| 56(A-6) | 84.00 | 0111 | 1110 0000 0100 |
| 57(A-5) | 90.00 | 0111 | 1111 1000 0100 |
| 58(A-4) | 96.00 | 0111 | 1110 1100 0100 |
| 59(A-3) | 102.00 | 1011 | 1111 0010 0100 |
| 60(A-2) | 108.00 | 1011 | 1110 0110 0100 |
| 61(A-1) | 114.00 | 1011 | 1111 1110 0100 |
| 62(RR) | 402.00 | 1110 | 1111 1111 0110 |
| 63(SS) | 408.00 | 1110 | 1110 1000 1110 |

| CH | FREQ | BAND | DIP SWITCH SET |
|--------|--------|------|----------------|
| 64(TT) | 414.00 | 1110 | 1111 0100 1110 |
| 65(UU) | 420.00 | 1110 | 1110 0010 1110 |
| 66(VV) | 426.00 | 1110 | 1111 1010 1110 |
| 67(WW) | 432.00 | 1110 | 1110 1110 1110 |
| 68(XX) | 438.00 | 1110 | 1111 0001 1110 |
| 69(YY) | 444.00 | 1110 | 1110 0101 1110 |
| 70(ZZ) | 450.00 | 1110 | 1111 1101 1110 |
| 71 | 456.00 | 1110 | 1110 1011 1110 |
| 72 | 462.00 | 1110 | 1111 0111 1110 |
| 73 | 468.00 | 1110 | 1110 0000 0001 |
| 74 | 474.00 | 1110 | 1111 1000 0001 |
| 75 | 480.00 | 1110 | 1110 1100 0001 |
| 76 | 486.00 | 1110 | 1111 0010 0001 |
| 77 | 492.00 | 1110 | 1110 0110 0001 |
| 78 | 498.00 | 1110 | 1111 1110 0001 |
| 79 | 504.00 | 1110 | 1110 1001 0001 |
| 80 | 510.00 | 1110 | 1111 0101 0001 |
| 81 | 516.00 | 1110 | 1110 0011 0001 |
| 82 | 522.00 | 1110 | 1111 1011 0001 |
| 83 | 528.00 | 1110 | 1110 1111 0001 |
| 84 | 534.00 | 1110 | 1111 0000 1001 |
| 85 | 540.00 | 1110 | 1110 0100 1001 |
| 86 | 546.00 | 1110 | 1111 1100 1001 |
| 87 | 552.00 | 1110 | 1110 1010 1001 |
| 88 | 558.00 | 1110 | 1111 0110 1001 |
| 89 | 564.00 | 1110 | 1110 0001 1001 |
| 90 | 570.00 | 1110 | 1111 1001 1001 |
| 91 | 576.00 | 1110 | 1110 1101 1001 |
| 92 | 582.00 | 1110 | 1111 0011 1001 |
| 93 | 588.00 | 1110 | 1110 0111 1001 |
| 94 | 594.00 | 1110 | 1111 1111 1001 |
| 95 | 600.00 | 1110 | 1110 1000 0101 |
| 96 | 606.00 | 1110 | 1111 0100 0101 |
| 97 | 612.00 | 1110 | 1110 0010 0101 |

| CH | FREQ | BAND | DIP SWITCH SET |
|-----|--------|------|----------------|
| 98 | 618.00 | 1110 | 1111 1010 0101 |
| 99 | 624.00 | 1110 | 1110 1110 0101 |
| 100 | 630.00 | 1110 | 1111 0001 0101 |
| 101 | 636.00 | 1110 | 1110 0101 0101 |
| 102 | 642.00 | 1110 | 1111 1101 0101 |
| 103 | 648.00 | 1110 | 1110 1011 0101 |
| 104 | 654.00 | 1110 | 1111 0111 0101 |
| 105 | 660.00 | 1110 | 1110 0000 1101 |
| 106 | 666.00 | 1110 | 1111 1000 1101 |
| 107 | 672.00 | 1110 | 1110 1100 1101 |
| 108 | 678.00 | 1110 | 1111 0010 1101 |
| 109 | 684.00 | 1110 | 1110 0110 1101 |
| 110 | 690.00 | 1110 | 1111 1110 1101 |
| 111 | 696.00 | 1110 | 1110 1001 1101 |
| 112 | 702.00 | 1110 | 1111 0101 1101 |
| 113 | 708.00 | 1110 | 1110 0011 1101 |
| 114 | 714.00 | 1110 | 1111 1011 1101 |
| 115 | 720.00 | 1110 | 1110 1111 1101 |
| 116 | 726.00 | 1110 | 1111 0000 0011 |
| 117 | 732.00 | 1110 | 1110 0100 0011 |
| 118 | 738.00 | 1110 | 1111 1100 0011 |
| 119 | 744.00 | 1110 | 1110 1010 0011 |
| 120 | 750.00 | 1110 | 1111 0110 0011 |
| 121 | 756.00 | 1110 | 1110 0001 0011 |
| 122 | 762.00 | 1110 | 1111 1001 0011 |
| 123 | 768.00 | 1110 | 1110 1101 0011 |
| 124 | 774.00 | 1110 | 1111 0011 0011 |
| 125 | 780.00 | 1110 | 1110 0111 0011 |
| 126 | 786.00 | 1110 | 1111 1111 0011 |
| 127 | 792.00 | 1110 | 1110 1000 1011 |
| 128 | 798.00 | 1110 | 1111 0100 1011 |
| 129 | 804.00 | 1110 | 1110 0010 1011 |

HRC CODES FOR OTR-3550 DEMODULATOR

4) OUTPUT CHANNEL SELECTION - MODULATOR

Remove the front panel plate marked "Output Channel Select" to expose the channel select and offset select DIP switches as shown in Figure 4.

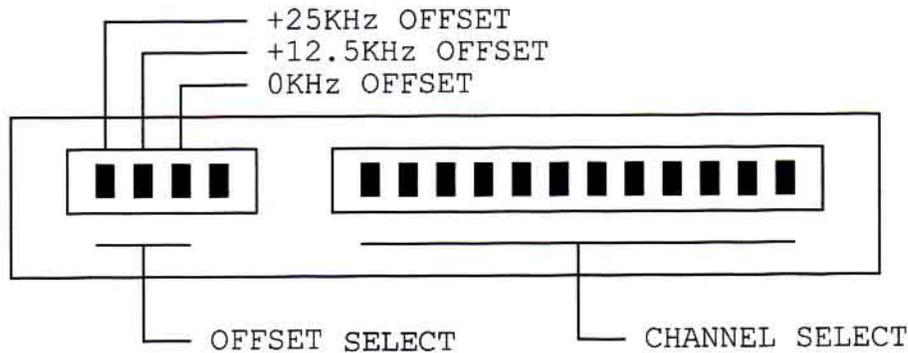


FIGURE 4 - OUTPUT CHANNEL SELECT

- A) CHANNEL SELECTION - Channel selection is accomplished by setting the 12-position DIP switches to the corresponding channel code. Channel codes can be chosen from Figure #5 or the code card attached to the "Output Channel Select" cover plate. Then, set the DIP switches from left to right. For example - If channel 11 is selected, then its corresponding channel code is:

0 0 1 1 0 1 0 0 1 1 0 0

- B) F.C.C. OFFSET SELECTION - Accomplished by setting the 4-position DIP switches to the corresponding offset code. Offset codes can be chosen from Figure #5 or from the code card attached to the "Output Channel Select" cover plate. For example if offset code +12.5KHz is required, the switches would be set as follows:

1 0 1 1

- C) OUTPUT CONNECTION - The output signal is present at the RF output connector. Also, this unit provides a -20dB test point for your convenience.

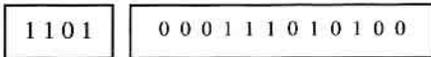
5) RF AND AURAL CARRIER LEVEL ADJUSTMENT

- A) Connect a spectrum analyzer or field strength meter to the RF output connector. Set the video carrier to the desired level with the RF output level control. This unit is capable of +60dBmV typical output and can be adjusted downward by 10dB minimum.
- B) Tune the field strength meter to the aural carrier (4.5MHz above the video carrier). Adjust the aural carrier level to be approximately 15dB below the video carrier.

CAUTION: Reducing the visual/aural carrier ratio to less than 15 dB can result in high out-of-band spurious signals in adjacent channels.



0 = Switch in DOWN Position
1 = Switch in UP Position



F.C.C.
OFFSET

CHANNEL SELECT

1101 = 0kHz OFFSET

1011 = 12.5kHz OFFSET

0111 = 25kHz OFFSET

- 1) SELECT THE DESIRED CHANNEL BY USE OF THE CHANNELS SELECT SWITCH AND THE CODE SHEETS BEHIND THIS CARD.
- 2) SELECT THE PROPER OFFSET BY USE OF THE OFFSET SWITCH AND THE OFFSET INFORMATION BELOW.
- 3) THE EXAMPLE ABOVE INDICATES CHANNEL 6 WITH 0kHz OFFSET.

OFFSET SELECT INFORMATION

- 1) CHANNELS A, B, C, L TO W, AA TO KK & GG TO QQ = 12.5kHz.
- 2) CHANNELS A-2, A-1 & FF = 25kHz.
- 3) ALL OTHERS = 0kHz

95-507

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OTR-3550 MODULATOR DIP SWITCH CODES

| EIA CH. | HISTORIC CH. | MHz | CHANNEL SELECT | | |
|---------|--------------|--------|----------------|------|------|
| 2 | 2 | 55.25 | 0011 | 1001 | 0100 |
| 3 | 3 | 61.25 | 0100 | 0101 | 0100 |
| 4 | 4 | 67.25 | 0001 | 0101 | 0100 |
| 5 | 5 | 77.25 | 0100 | 1101 | 0100 |
| 6 | 6 | 83.25 | 0001 | 1101 | 0100 |
| 95 | A-5 | 91.25 | 0000 | 0011 | 0100 |
| 96 | A-4 | 97.25 | 0110 | 0011 | 0100 |
| 97 | A-3 | 103.25 | 0011 | 0011 | 0100 |
| 98 | A-2 | 109.25 | 0100 | 1011 | 0100 |
| 99 | A-1 | 115.25 | 0001 | 1011 | 0100 |
| 14 | A | 121.25 | 0111 | 1011 | 0100 |
| 15 | B | 127.25 | 0010 | 0111 | 0100 |
| 16 | C | 133.25 | 0101 | 0111 | 0100 |
| 17 | D | 139.25 | 0000 | 1111 | 0100 |
| 18 | E | 145.25 | 0110 | 1111 | 0100 |
| 19 | F | 151.25 | 0011 | 1111 | 0100 |
| 20 | G | 157.25 | 0100 | 0000 | 1100 |
| 21 | H | 163.25 | 0001 | 0000 | 1100 |
| 22 | I | 169.25 | 0111 | 0000 | 1100 |
| 7 | 7 | 175.25 | 0010 | 1000 | 1100 |
| 8 | 8 | 181.25 | 0101 | 1000 | 1100 |
| 9 | 9 | 187.25 | 0000 | 0100 | 1100 |
| 10 | 10 | 193.25 | 0110 | 0100 | 1100 |
| 11 | 11 | 199.25 | 0011 | 0100 | 1100 |
| 12 | 12 | 205.25 | 0100 | 1100 | 1100 |
| 13 | 13 | 211.25 | 0001 | 1100 | 1100 |
| 23 | J | 217.25 | 0111 | 1100 | 1100 |
| 24 | K | 223.25 | 0010 | 0010 | 1100 |
| 25 | L | 229.25 | 0101 | 0010 | 1100 |
| 26 | M | 235.25 | 0000 | 1010 | 1100 |
| 27 | N | 241.25 | 0110 | 1010 | 1100 |
| 28 | O | 247.25 | 0011 | 1010 | 1100 |
| 29 | P | 253.25 | 0100 | 0110 | 1100 |
| 30 | Q | 259.25 | 0001 | 0110 | 1100 |
| 31 | R | 265.25 | 0111 | 0110 | 1100 |
| 32 | S | 271.25 | 0010 | 1110 | 1100 |
| 33 | T | 277.25 | 0101 | 1110 | 1100 |
| 34 | U | 283.25 | 0000 | 0001 | 1100 |
| 35 | V | 289.25 | 0110 | 0001 | 1100 |
| 36 | W | 295.25 | 0011 | 0001 | 1100 |
| 37 | AA | 301.25 | 0100 | 1001 | 1100 |

| | | | | | |
|----|----|--------|------|------|------|
| 38 | BB | 307.25 | 0001 | 1001 | 1100 |
| 39 | CC | 313.25 | 0111 | 1001 | 1100 |
| 40 | DD | 319.25 | 0010 | 0101 | 1100 |
| 41 | EE | 325.25 | 0101 | 0101 | 1100 |
| 42 | FF | 331.25 | 0000 | 1101 | 1100 |
| 43 | GG | 337.25 | 0110 | 1101 | 1100 |
| 44 | HH | 343.25 | 0011 | 1101 | 1100 |
| 45 | II | 349.25 | 0100 | 0011 | 1100 |
| 46 | JJ | 355.25 | 0001 | 0011 | 1100 |
| 47 | KK | 361.25 | 0111 | 0011 | 1100 |
| 48 | LL | 367.25 | 0010 | 1011 | 1100 |
| 49 | MM | 373.25 | 0101 | 1011 | 1100 |
| 50 | NN | 379.25 | 0000 | 0111 | 1100 |
| 51 | OO | 385.25 | 0110 | 0111 | 1100 |
| 52 | PP | 391.25 | 0011 | 0111 | 1100 |
| 53 | QQ | 397.25 | 0100 | 1111 | 1100 |
| 54 | RR | 403.25 | 0001 | 1111 | 1100 |
| 55 | SS | 409.25 | 0111 | 1111 | 1100 |
| 56 | TT | 415.25 | 0010 | 0000 | 0010 |
| 57 | UU | 421.25 | 0101 | 0000 | 0010 |
| 58 | VV | 427.25 | 0000 | 1000 | 0010 |
| 59 | WW | 433.25 | 0110 | 1000 | 0010 |
| 60 | XX | 439.25 | 0011 | 1000 | 0010 |
| 61 | YY | 445.25 | 0100 | 0100 | 0010 |
| 62 | ZZ | 451.25 | 0001 | 0100 | 0010 |
| 63 | 63 | 457.25 | 0111 | 0100 | 0010 |
| 64 | 64 | 463.25 | 0010 | 1100 | 0010 |
| 65 | 65 | 469.25 | 0101 | 1100 | 0010 |
| 66 | 66 | 475.25 | 0000 | 0010 | 0010 |
| 67 | 67 | 481.25 | 0110 | 0010 | 0010 |
| 68 | 68 | 487.25 | 0011 | 0010 | 0010 |
| 69 | 69 | 493.25 | 0100 | 1010 | 0010 |
| 70 | 70 | 499.25 | 0001 | 1010 | 0010 |
| 71 | 71 | 505.25 | 0111 | 1010 | 0010 |
| 72 | 72 | 511.25 | 0010 | 0110 | 0010 |
| 73 | 73 | 517.25 | 0101 | 0110 | 0010 |
| 74 | 74 | 523.25 | 0000 | 1110 | 0010 |
| 75 | 75 | 529.25 | 0110 | 1110 | 0010 |
| 76 | 76 | 535.25 | 0011 | 1110 | 0010 |
| 77 | 77 | 541.25 | 0100 | 0001 | 0010 |
| 78 | 78 | 547.25 | 0001 | 0001 | 0010 |

OTR-3550 MODULATOR CHANNEL SELECT CHART

DEMODULATOR TROUBLESHOOTING

This unit has a restricted AFC range. This is done to eliminate a problem inherent in many low cost modulators incorporating AFC. That problem occurs when the desired off-air channel goes off the air and the AFC has a wide enough range to pull in an adjacent channel. In most cases the AFC holds the undesired channel when the desired channel returns to the air.

However, many independent UHF broadcast stations and translators operate out of specification with regard to F.C.C. rules. We have found some in excess of 1MHz from their specified channel allocations. Fortunately, the OTR-3550 is capable of selecting the L.O. frequency in -.25MHz increments. This will allow you to select an L.O. frequency to compensate for your UHF station error.

TROUBLESHOOTING:

- 1) Make sure that the 12-position DIP switches for input channel select are in the correct position (according to the input channel select chart). Also, make sure that the 6-position DIP switches are in the proper position. Set the AFC switch in the "OFF" mode (UP position).
- 2) If the audio signal is present (you can hear it) but there is no video signal, then the input level to the UHF input is either too low (-20dBmV or below) which triggers an internal squelch circuit, or the UHF transmitted signal may be off frequency. An off frequency input will cause the unit to act like a low level input signal because it will run the video carrier down the rejection slope of the I.F. SAW filter.
- 3) If a field strength meter is available, measure the UHF input level for the channel of interest. If the signal is below -10dBmV, a preamplifier is recommended. If possible, view the UHF signal on a TV set and ensure that you have an adequate picture. If properly set up, the OTR-3550 should produce a picture of comparable video quality.
- 4) View the video output on a suitable composite video monitor. If it is of comparable quality to the off-air signal, the unit and the TV station are both operating properly.

If the picture is of inferior quality or there is no picture, begin changing the L.O. frequency as follows:

- 1) The first two DIP switches as viewed from left to right are always in the "DOWN" position (Figure #7), and the third switch is always in the "UP" position for Standard frequency allocations.
- 2) Moving the first switch to the "UP" position will increase the L.O. frequency by 0.25MHz. If the picture improves significantly, move the second DIP switch to the "UP" position, and the first switch back to the "DOWN" position. This increases the L.O. by 0.50MHz. If the picture quality degrades (not as good as with 0.25MHz offset), then return to the 0.25MHz offset position (1st switch "UP") and activate the AFC switch (5th switch in the "DOWN" position).
- 3) If the picture quality degrades considerably in step (2) by increasing the L.O. frequency, then move the 1st and 2nd DIP switches to the "UP" position and move the 3rd DIP switch to the "DOWN" position. This procedure will move the L.O. frequency down by 0.25MHz. If the picture quality improves, try putting the 1st DIP switch in the "DOWN" position, leaving the 2nd DIP switch in the "UP" position and the 3rd DIP switch in the "DOWN" position.

Determine which position gives better quality and activate the AFC switch (5th DIP switch in the “DOWN” position).

| <u>OFFSET (MHz)</u> | <u>DIP SWITCH SETTING (Input Channel Selection)</u> |
|---------------------|---|
| 0.0 (Standard) | 0 0 1 0 1 0 0 0 0 0 0 1 |
| +0.25 | 1 0 1 0 1 0 0 0 0 0 0 1 |
| +0.50 | 0 1 1 0 1 0 0 0 0 0 0 1 |
| -0.25 | 1 1 0 0 1 0 0 0 0 0 0 1 |
| -0.50 | 0 1 0 0 1 0 0 0 0 0 0 1 |

FIGURE 7
OFFSET SETTING FOR CHANNEL 14 (UHF)

If this procedure does not yield any improvement, please consult the factory.