



OTR-3550

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

INSTRUCTION MANUAL

Phone: (209) 586-1022

(800) 545-1022

Fax: (209) 586-1026

E-Mail: salesupport@olsontech.com

www.olsontech.com

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.

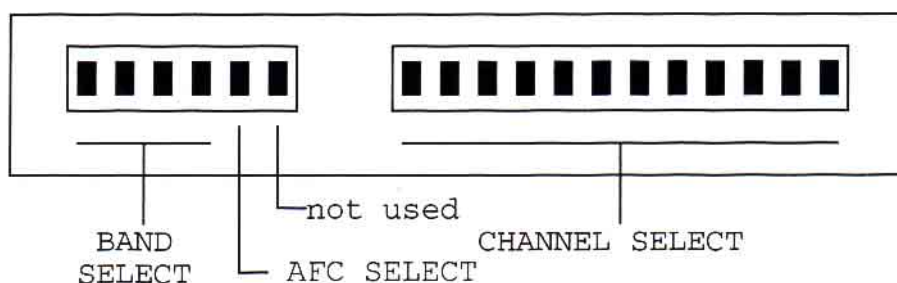


FIGURE 1 - INPUT CHANNEL SELECT

- 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.

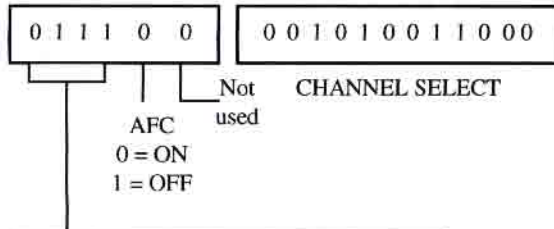
- D) **INPUT CONNECTION** - After an input channel has been selected (Steps A through C), connect an antenna or cable source to the RF input terminal. Any VHF, UHF or cable source can be connected to the RF input connector. For optimum video quality response, the input signal level should have a minimum 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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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.

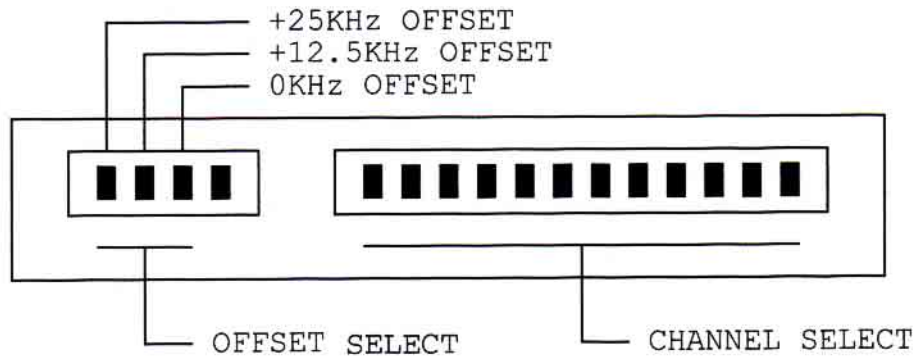


FIGURE 4 - OUTPUT CHANNEL SELECT

- 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.

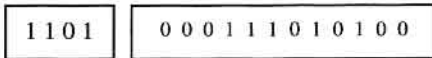
5) RF AND AURAL CARRIER LEVEL ADJUSTMENT

- 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

MADE IN THE U.S.A.

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.