EXPO 100 EXPANDER

MODEL S

Before installing this expander take a few minutes to search out the circuit. This will help you later in determining how to install it into other units.

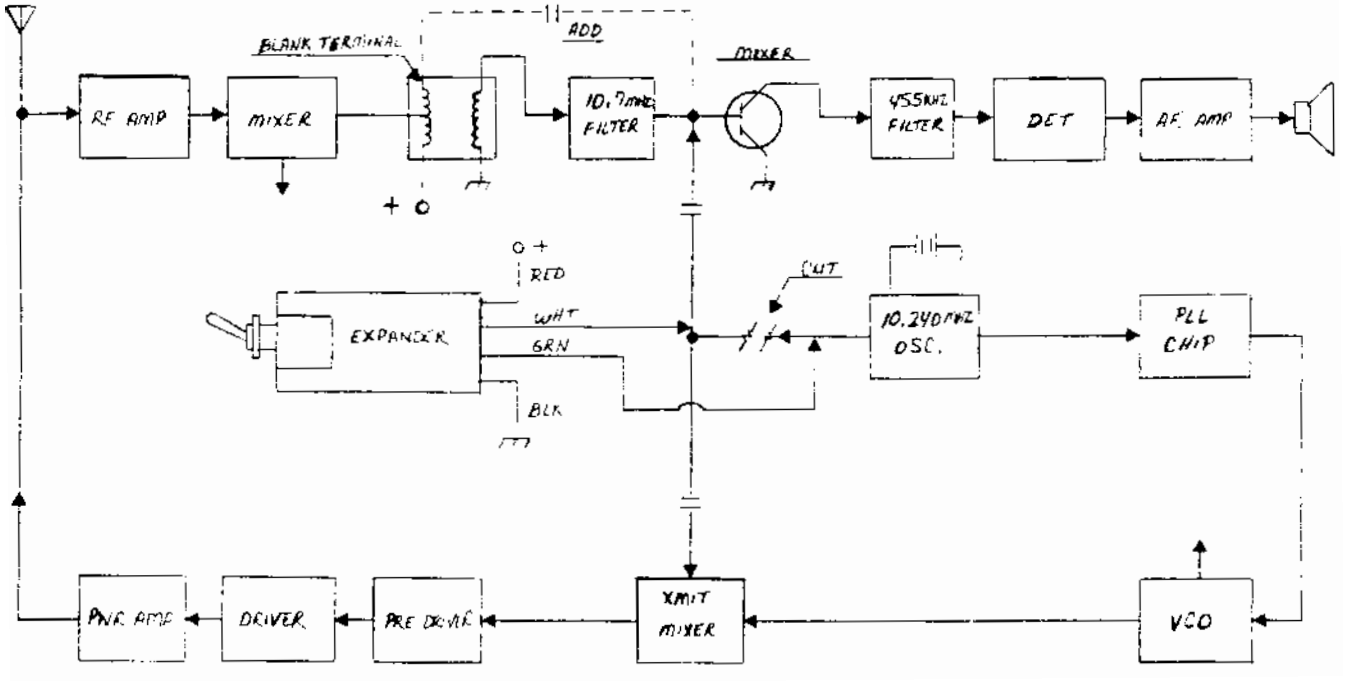
First locate the 10.695 MHz crystal filter. This often looks like a crystal, but has three legs on it. Since the center leg is ground the input side will be connected to a coil and usually the output leg will go to a transistor. Looking at the coil on the filters input side, notice that there are three pins on one side, and two on the other. Solder a 100pf capacitor to the blank terminal on the three pin side. Solder the capacitors other end to the base of the mixer transistor. This is on the output side of the crystal filter. We have now provided a series tuned circuit for the expanders extra channels without destroying the selectivity of the normal channels.

Next we need to remove the 10.240 MHz signal from the transmit mixer, and the second I.F. stage. To accomplish this we will start at pin 4 of the TA7310P mixer and trace the circuit backwards. Usually by simply cutting a trace from the 10.240 MHz osc. circuit, both the mixer and I.F. can be done at the same time. Do not disconnect the 10.240 MHz osc. from the PLL chip. Now by soldering the expanders green and white wires to each side of the cut trace the expander switch will do the rest.

Solder the expanders red wire to +13.8 VDC at the on-off switch, and the remaining black wire to circuit board ground. That's all there is to it!

You may have to go back to the receive coils and peak them just a bit to get maximum performance on all channels.

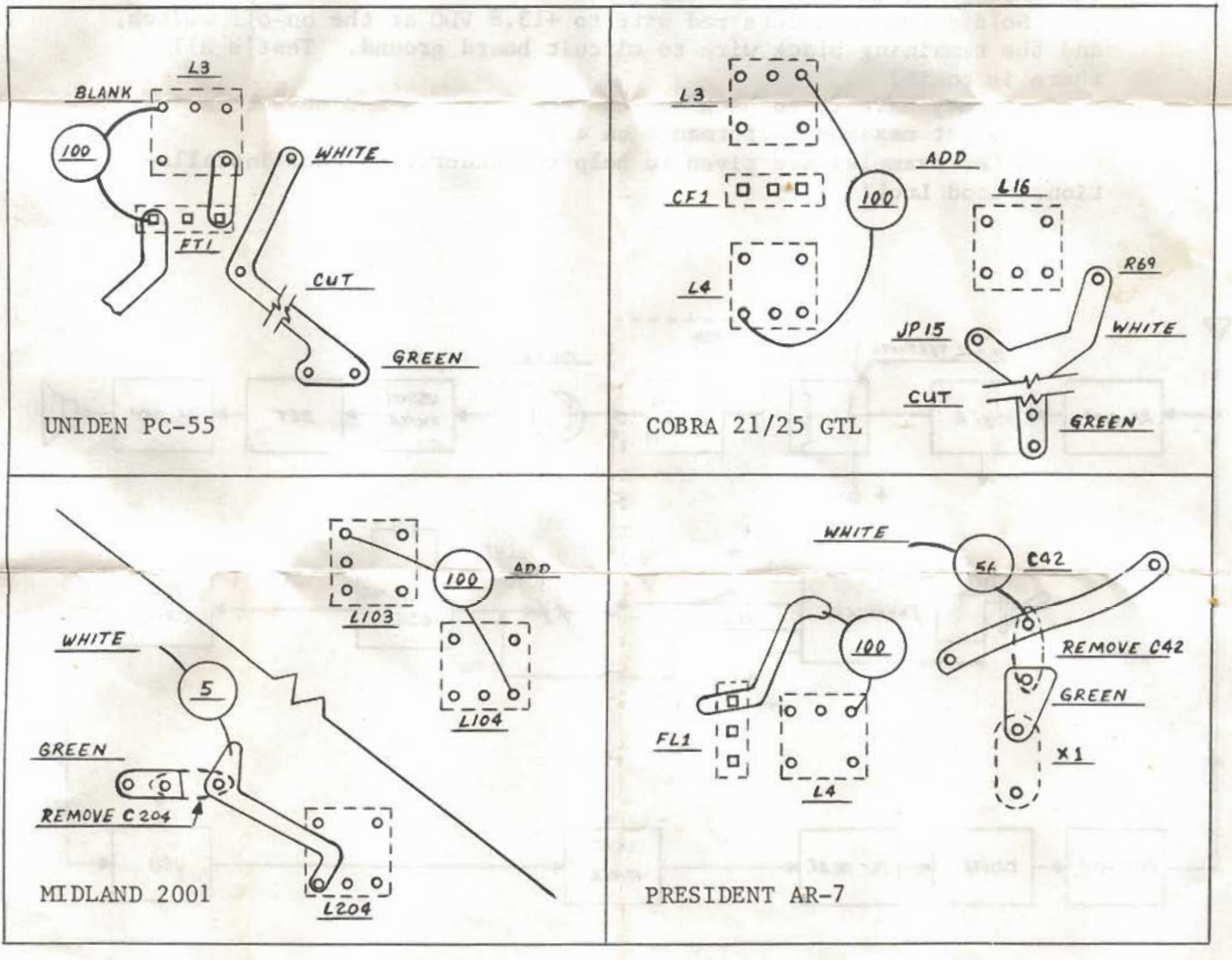
A few examples are given to help you understand each installation. Good Luck!



INSTALLATION

1. Solder the expanders red wire to +13.8 VDC supply voltage at the on-off switch.
2. Solder the expanders black wire to circuit board ground.
3. Locate the circuit trace from the 10.240 MHz osc. to the receive-transmit mixers and cut it. Usually this trace has a capacitor going to pin 4 of the TA7310P IC, and another capacitor to the rec. mixer transistor. The idea is to cut the trace so that both capacitors are still together, but separated from the osc.. If you are not sure where to cut the trace, just remove each capacitor from the board and solder a 10pf capacitor to each mixer. Solder the capacitors together and the expanders white wire to the center. The remaining green wire must always go to back of the 10.240 MHz osc..(other side of cut).
4. Locate the 10.695 MHz coil on the input side of the 10.7 MHz filter. Solder the 100pf capacitor to the open pin of the coil, and its other end to the base of the mixer transistor. You may want to experiment with several points to get maximum rec. signal on the extra channels. (No damage will result)
5. Now go back and slightly tweak the rec. coils for maximum signal on all channels.

EXAMPLES



EXPO 100 EXPANDER FREQUENCY CHART

(FREQUENCIES IN MHz)

CHANNELS	LOW	NORMAL	HIGH
1	26.525	26.965	27.405
2	26.535	26.975	27.415
3	26.545	26.985	27.425
4	26.565	27.005	27.445
5	26.575	27.015	27.455
6	26.585	27.025	27.465
7	26.595	27.035	27.475
8	26.615	27.055	27.495
9	26.625	27.065	27.505
10	26.635	27.075	27.515
11	26.645	27.085	27.525
12	26.665	27.105	27.545
13	26.675	27.115	27.555
14	26.685	27.125	27.565
15	26.695	27.135	27.575
16	26.715	27.155	27.595
17	26.725	27.165	27.605
18	26.735	27.175	27.615
19	26.745	27.185	27.625
20	26.765	27.205	27.645
21	26.775	27.215	27.655
22	26.785	27.225	27.665
23	26.815	27.255	27.695
24	26.795	27.235	27.675
25	26.805	27.245	27.685
26	26.825	27.265	27.705
27	26.835	27.275	27.715
28	26.845	27.285	27.725
29	26.855	27.295	27.735
30	26.865	27.305	27.745
31	26.875	27.315	27.755
32	26.885	27.325	27.765
33	26.895	27.335	27.775
34	26.905	27.345	27.785
35	26.915	27.355	27.795
36	26.925	27.365	27.805
37	26.935	27.375	27.815
38	26.945	27.385	27.825
39	26.955	27.395	27.835
40	26.965	27.405	27.845