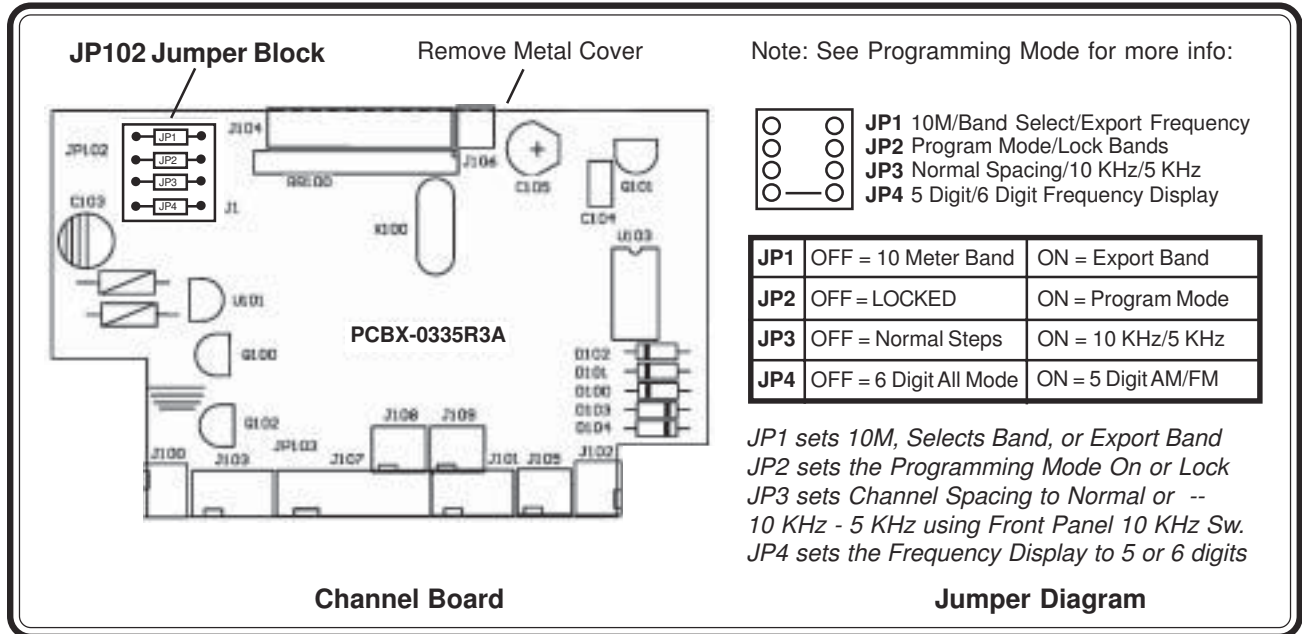


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MAGNUM S-9 (Draft)  
10 METER HF AMATEUR MOBILE TRANSCEIVER SCHEMATIC  
NOTE: All changes are subject for better performance without further notice

# MAGNUM S9 EXPORT FREQUENCY CONVERSION



## Introduction:

The Magnum S9 is programmed for the 10 Meter Amateur Band out of the box, and covers a range of 28.065 - 28.525 MHz. The frequency range can be extended for Export Use in 8 Band segments each containing 40 Channels. These 8 bands can be programmed to any combination of Eight 40 channel blocks between 25.615 - 30.555 MHz. The radio can also be programmed to cover all frequencies in 10 KHz or 5 KHz steps between 26.000 - 32.990 MHz. (See Programming Mode)

## 10 Meter Only Mode:

The default setting from the factory covers only 4 bands between 28.065 MHz - 28.525 MHz. The jumper setting for this is JP1, JP2, JP3 = OFF and JP4 = ON.

## Export Mode:

This mode is pre-set to 8 Bands between 25.615 MHz - 29.205 MHz. The jumper setting for this mode is JP1 = ON JP2,JP3 = OFF JP4 = ON.

## Programming Mode:

This feature allows the radio to be setup into 8 separate bands, each individually programmed to cover any 40 channel segments you choose between 25.165 - 30.555 MHz. For instance, if you wanted Bands A and B to be setup to cover 25.165 - 26.055 MHz, Band C to be the CB Band 26.965 - 27.405 MHz, then Bands D, E, and F to cover 10 Meters at 28.315 - 29.655 MHz, the "Programming Mode" can be used to set this up.

Disconnect the wires from the power source after programming the unit to insure that the CPU (Computer) will reset properly. Set the radio's Band Selector to position A. Using 2 short bare wires, jump the pins of JP2 and JP4 (JP1 & JP3 = OFF) Notice that the Channel Display now indicates a letter A through L instead of the Channel number. Temporarily short the pins of JP1 on the Channel Board using another short wire. Notice that the Channel Display advances to the next Band Letter each time the pins of JP1 are shorted. Continue advancing the letters on the display until you see the desired band for Position A of the Band Selector. Move the Band selector to position B, and again short the jumper pins of JP1 until you see your choice for Band B. Repeat this for each of the 8 Band positions and when the last is done, move the Jumpers to this order Lock them into Memory. JP1 = ON JP2, JP3 = OFF JP4 = ON

This radio is also capable of covering the entire frequency range between 26.000 MHz - 32.990 MHz in 10 KHz steps or in 5 KHz steps (10 KHz Front Panel = OFF) JP1 = ON JP2 = OFF JP3 = ON JP4 = OFF

# MAGNUM S9 EXPORT FREQUENCY CONVERSION

JP1 = ON JP2 = OFF JP3 = OFF JP4 = ON (EXPORT BAND)

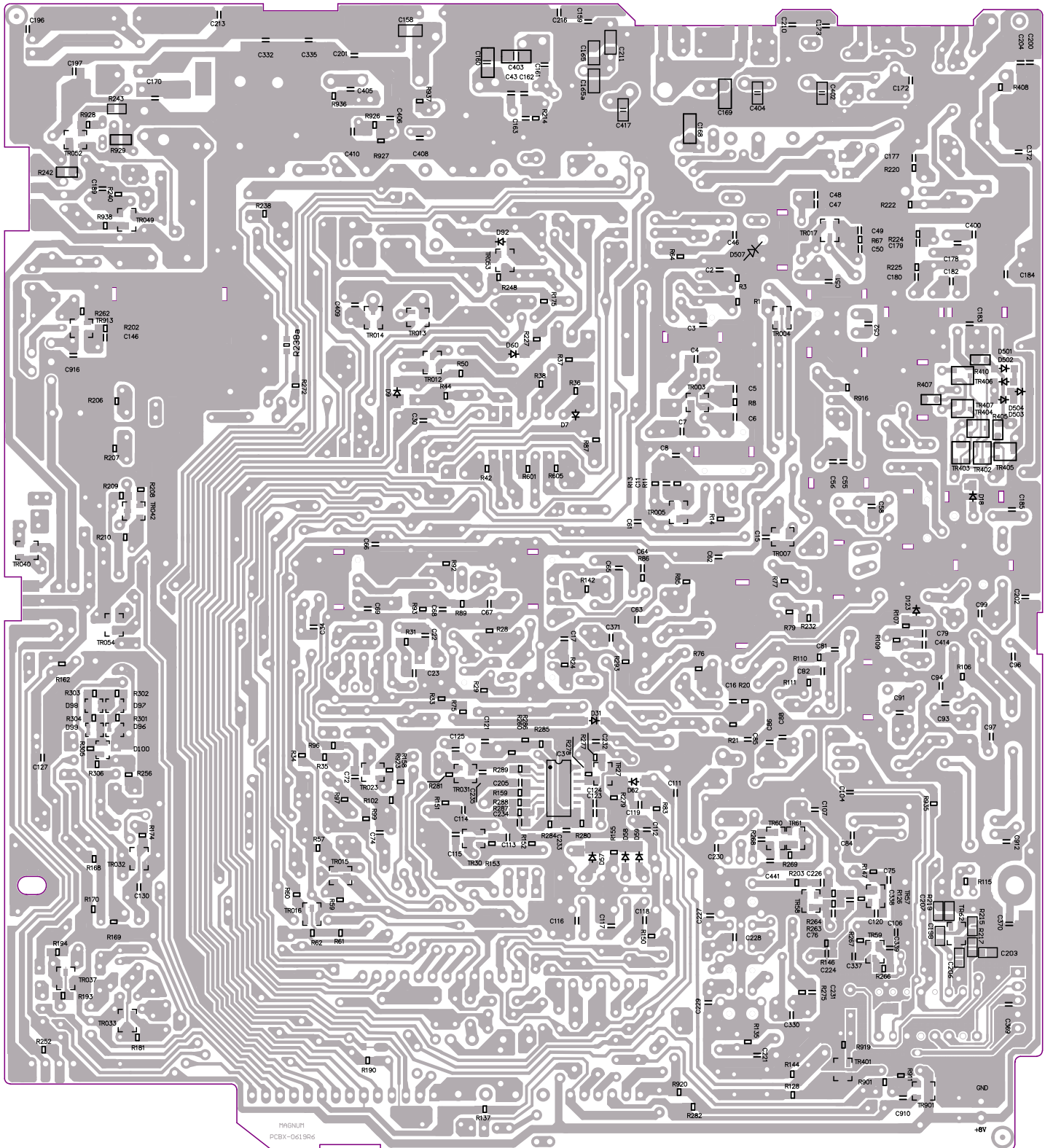
## Frequency Chart

Ch.	Band A	Band B	Band C	Band D	Band E	Band F	Band G	Band H	Band I	Band J	Band L
1	25.615	26.065	26.515	26.965	27.415	27.865	28.315	28.765	29.215	29.665	30.115
2	25.625	26.075	26.525	26.975	27.425	27.875	28.325	28.775	29.225	29.675	30.125
3	25.635	26.085	26.535	26.985	27.435	27.885	28.335	28.785	29.235	29.685	30.135
4	25.655	26.105	26.555	27.005	27.455	27.905	28.355	28.805	29.255	29.705	30.155
5	25.665	26.115	26.565	27.015	27.465	27.915	28.365	28.815	29.265	29.715	30.165
6	25.675	26.125	26.575	27.025	27.475	27.925	28.375	28.825	29.275	29.725	30.175
7	25.685	26.135	26.585	27.035	27.485	27.935	28.385	28.835	29.285	29.735	30.185
8	25.705	26.155	26.605	27.055	27.505	27.955	28.405	28.855	29.305	29.755	30.205
9	25.715	26.165	26.615	27.065	27.515	27.965	28.415	28.865	29.315	29.765	30.215
10	25.725	26.175	26.625	27.075	27.525	27.975	28.425	28.875	29.325	29.775	30.225
11	25.735	26.185	26.635	27.085	27.535	27.985	28.435	28.885	29.335	29.785	30.235
12	25.755	26.205	26.655	27.105	27.555	28.005	28.455	28.905	29.355	29.805	30.255
13	25.765	26.215	26.665	27.115	27.565	28.015	28.465	28.915	29.365	29.815	30.265
14	25.775	26.225	26.675	27.125	27.575	28.025	28.475	28.925	29.375	29.825	30.275
15	25.785	26.235	26.685	27.135	27.585	28.035	28.485	28.935	29.385	29.835	30.285
16	25.805	26.255	26.705	27.155	27.605	28.055	28.505	28.955	29.405	29.855	30.305
17	25.815	26.265	26.715	27.165	27.615	28.065	28.515	28.965	29.415	29.865	30.315
18	25.825	26.275	26.725	27.175	27.625	28.075	28.525	28.975	29.425	29.875	30.325
19	25.835	26.285	26.735	27.185	27.635	28.085	28.535	28.985	29.435	29.885	30.335
20	25.855	26.305	26.755	27.205	27.655	28.105	28.555	29.005	29.455	29.905	30.355
21	25.865	26.315	26.765	27.215	27.665	28.115	28.565	29.015	29.465	29.915	30.365
22	25.875	26.325	26.775	27.225	27.675	28.125	28.575	29.025	29.475	29.925	30.375
23	25.905	26.355	26.805	27.255	27.705	28.155	28.605	29.055	29.505	29.955	30.405
24	25.885	26.335	26.785	27.235	27.685	28.135	28.585	29.035	29.485	29.935	30.385
25	25.895	26.345	26.795	27.245	27.695	28.145	28.595	29.045	29.495	29.945	30.395
26	25.915	26.365	26.815	27.265	27.715	28.165	28.615	29.065	29.515	29.965	30.415
27	25.925	26.375	26.825	27.275	27.725	28.175	28.625	29.075	29.525	29.975	30.425
28	25.935	26.385	26.835	27.285	27.735	28.185	28.635	29.085	29.535	29.985	30.435
29	25.945	26.395	26.845	27.295	27.745	28.195	28.645	29.095	29.545	29.995	30.445
30	25.955	26.405	26.855	27.305	27.755	28.205	28.655	29.105	29.555	30.005	30.455
31	25.965	26.415	26.865	27.315	27.765	28.215	28.665	29.115	29.565	30.015	30.465
32	25.975	26.425	26.875	27.325	27.775	28.225	28.675	29.125	29.575	30.025	30.475
33	25.985	26.435	26.885	27.335	27.785	28.235	28.685	29.135	29.585	30.035	30.485
34	25.995	26.445	26.895	27.345	27.795	28.245	28.695	29.145	29.595	30.045	30.495
35	26.005	26.455	26.905	27.355	27.805	28.255	28.705	29.155	29.605	30.055	30.505
36	26.015	26.465	26.915	27.365	27.815	28.265	28.715	29.165	29.615	30.065	30.515
37	26.025	26.475	26.925	27.375	27.825	28.275	28.725	29.175	29.625	30.075	30.525
38	26.035	26.485	26.935	27.385	27.835	28.285	28.735	29.185	29.635	30.085	30.535
39	26.045	26.495	26.945	27.395	27.845	28.295	28.745	29.195	29.645	30.095	30.545
40	26.055	26.505	26.955	27.405	27.855	28.305	28.755	29.205	29.655	30.105	30.555

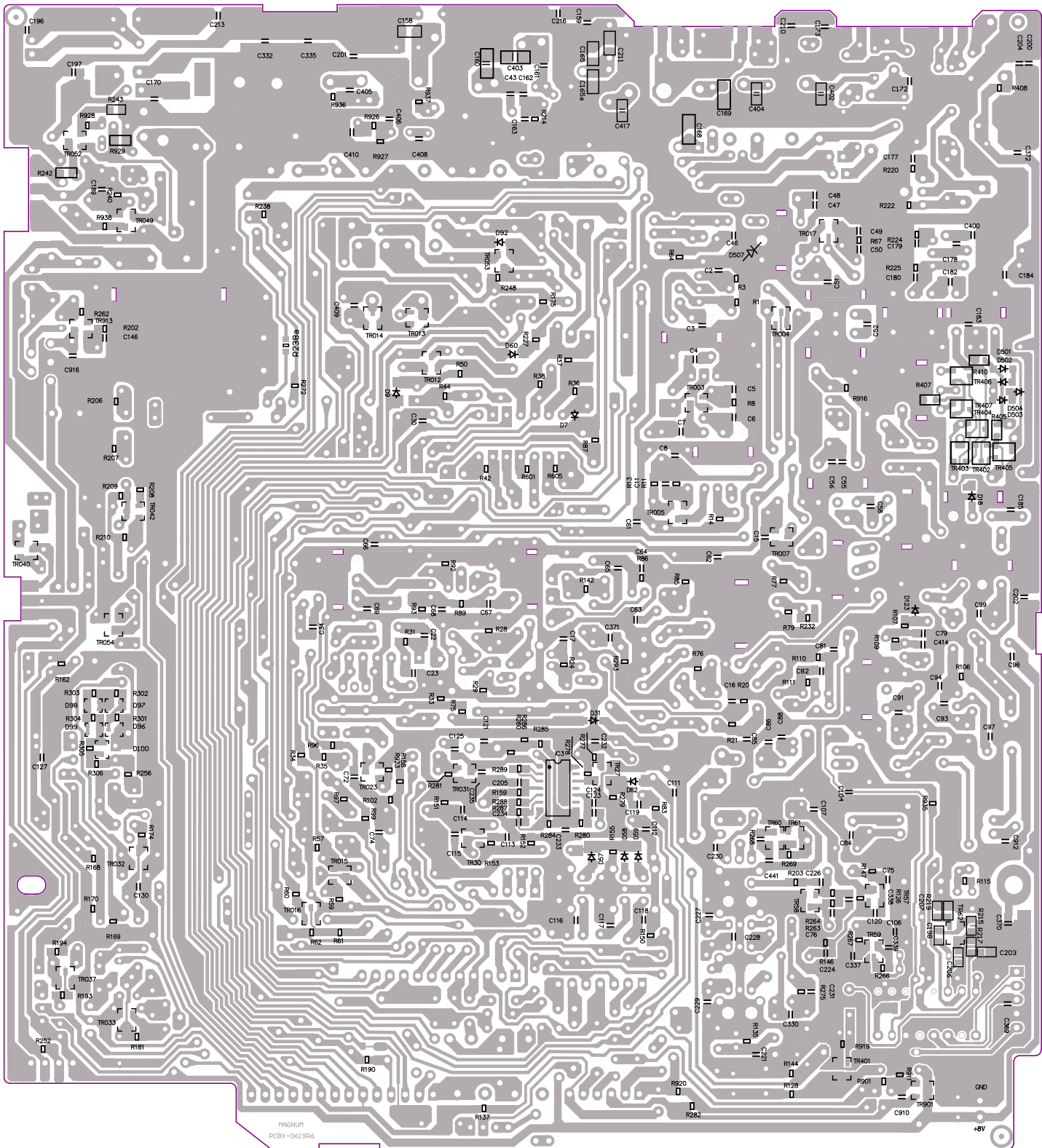
Note The VCO coil (behind channel board) may have to be re-adjusted for band coverage above 30 MHz  
Transmit Power above 29.990 MHz is Not Guaranteed.

### Programming Notes:

- \* Replace the Metal Cover on the Channel Board after programming to reduce receiver noise.
- \* The Channel Display Does Not Indicate Channels in the 10 KHz or 5 KHz Modes.
- \* Jumper JP4 sets 5 Digit (AM/FM Only) or 6 Digit (All Modes) Frequency Display.



PCBX-0619R6 BOTTOM LAYER  
MAGNUM S9 MASTER BOARD

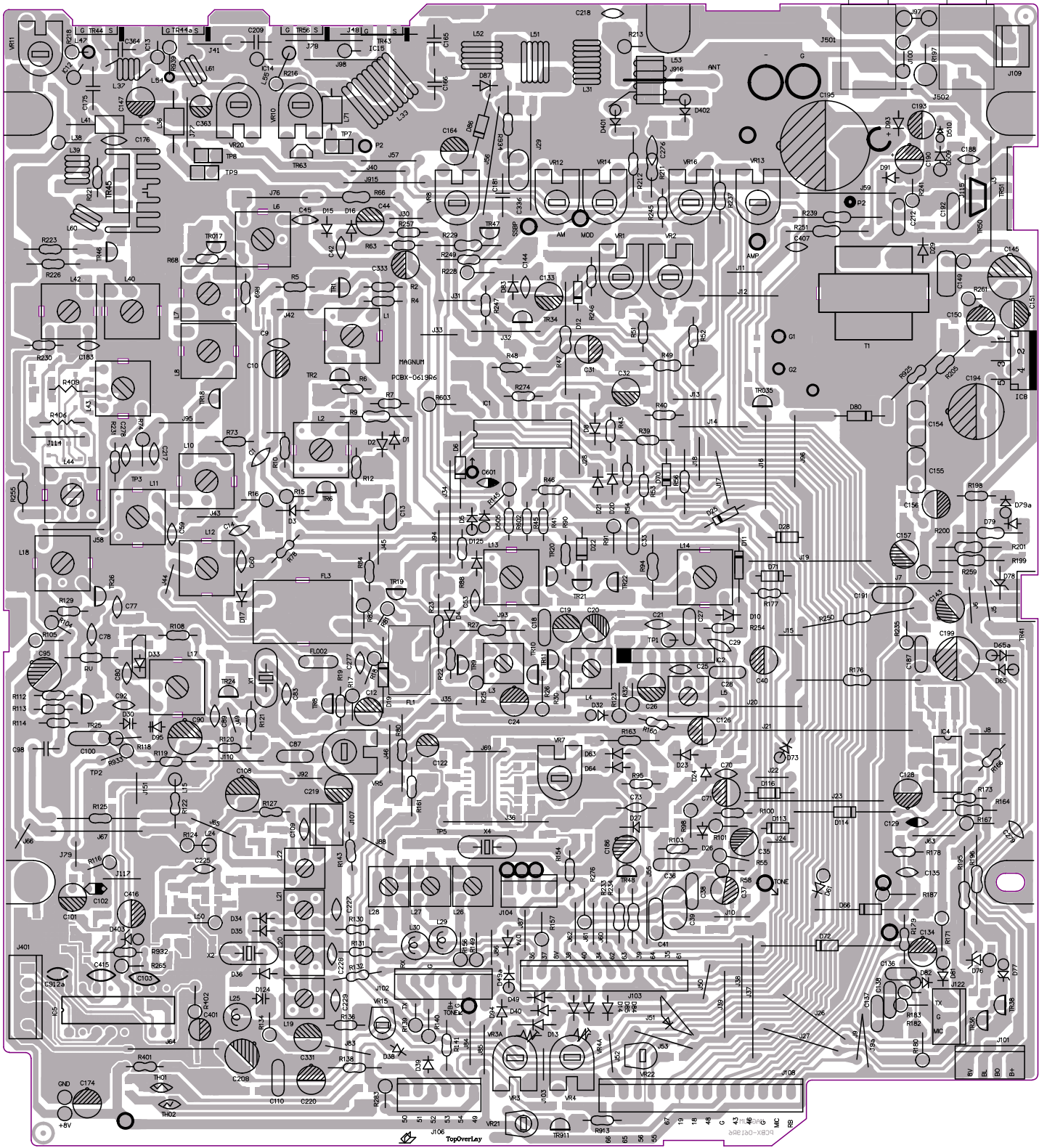


MAGNUM  
PCBX-0619R6

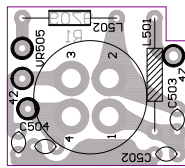
PCBX-0619R6 BOTTOM LAYER  
MAGNUM S9 MASTER BOARD

+5V

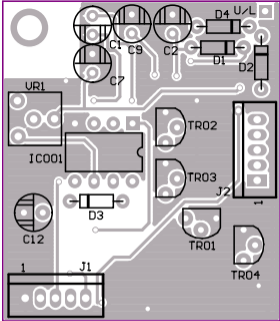
GND



PCB-X-0619R6 TOP LAYER  
MAGNUM S9 MASTER BOARD

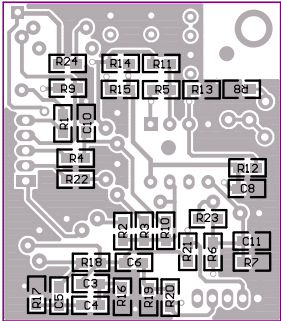


PCBX-9709R1  
TOP LAYER  
MIC SOCKET BOARD

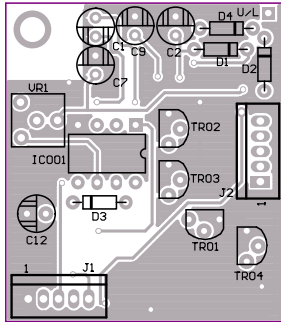


MAGNUM S9  
VSWR CONTROL BOARD





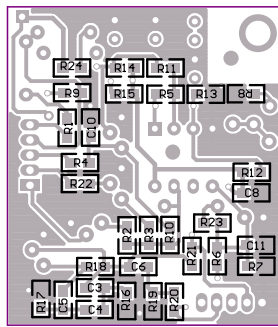
MAGNUM S9  
VSWR CONTROL BOARD



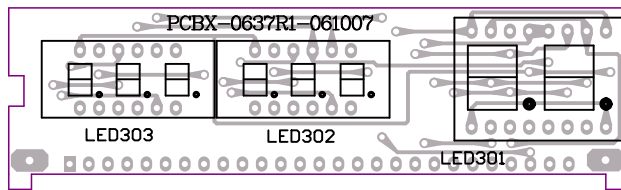
PCBX-0638  
TOP LAYER

MAGNUM S9  
VSWR CONTROL BOARD

PCBX-0638  
BOTTOM LAYER



MAGNUM S9  
VSWR CONTROL BOARD



PCBX-0637R1 TOP LAYER  
MAGNUM S9 COUNTER DISPLAY BOARD

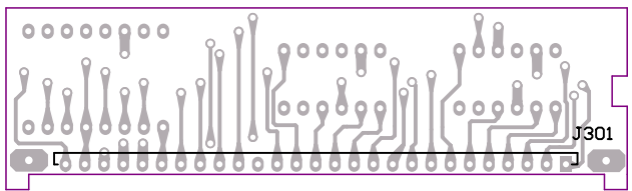
PCBX-0637R1-061007

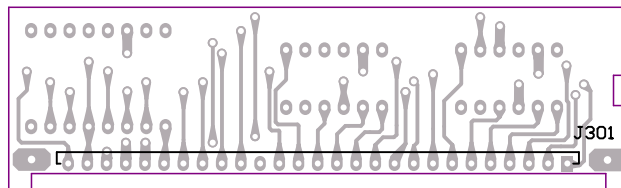
The diagram shows a PCB layout with three LED modules and a connector strip. The top section contains three rectangular modules, each with three LED footprints. The leftmost module is labeled LED303, the middle one LED302, and the rightmost one LED301. The LED301 module is larger and contains two additional black circular features. Below these modules is a long connector strip with 16 circular pads. The PCB is outlined in purple, and various traces and vias are shown in grey.

LED303

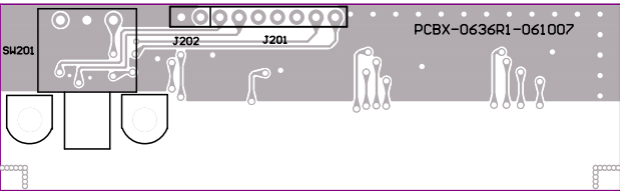
LED302

LED301





PCBX-0637R1 BOTTOM LAYER  
MAGNUM S9 COUNTER DISPLAY BOARD



PCBX-0636R1 TOP LAYER

MAGNUM S9 CHANNEL SWITCH BOARD

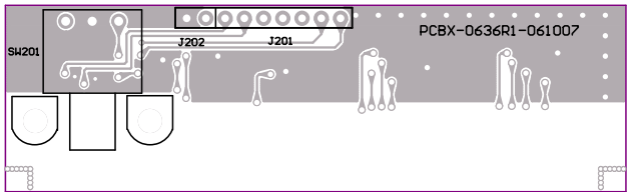


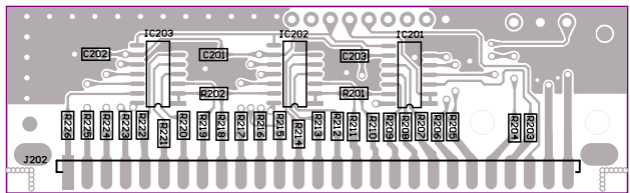
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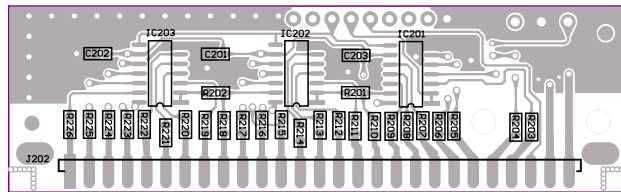
SW201

J202

J201

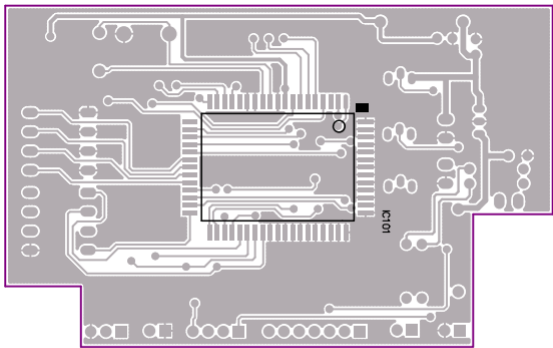




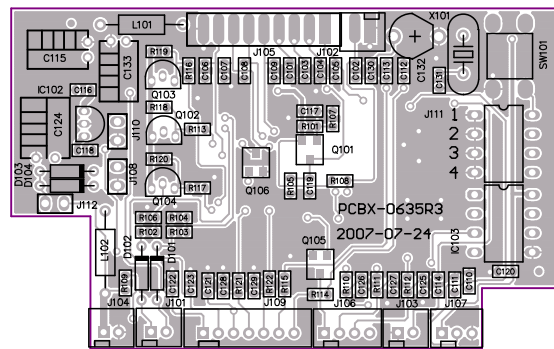


PCBX-0636R1 BOTTOM LAYER

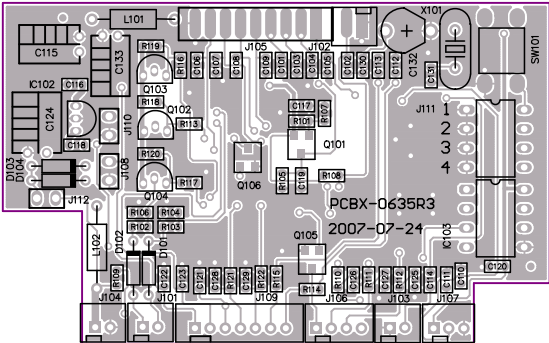
MAGNUM S9 CHANNEL SWITCH BOARD



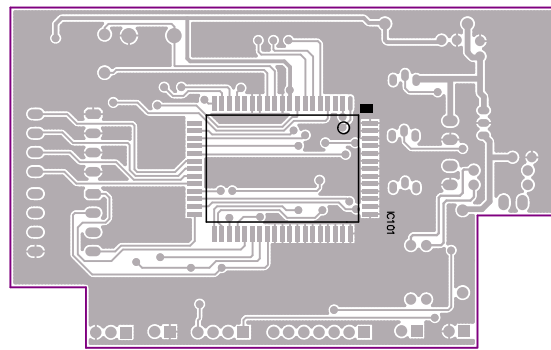
PCBX-0635R3 BOTTOM LAYER  
MAGNUM S9 FREQ.COUNTER CPU BOARD



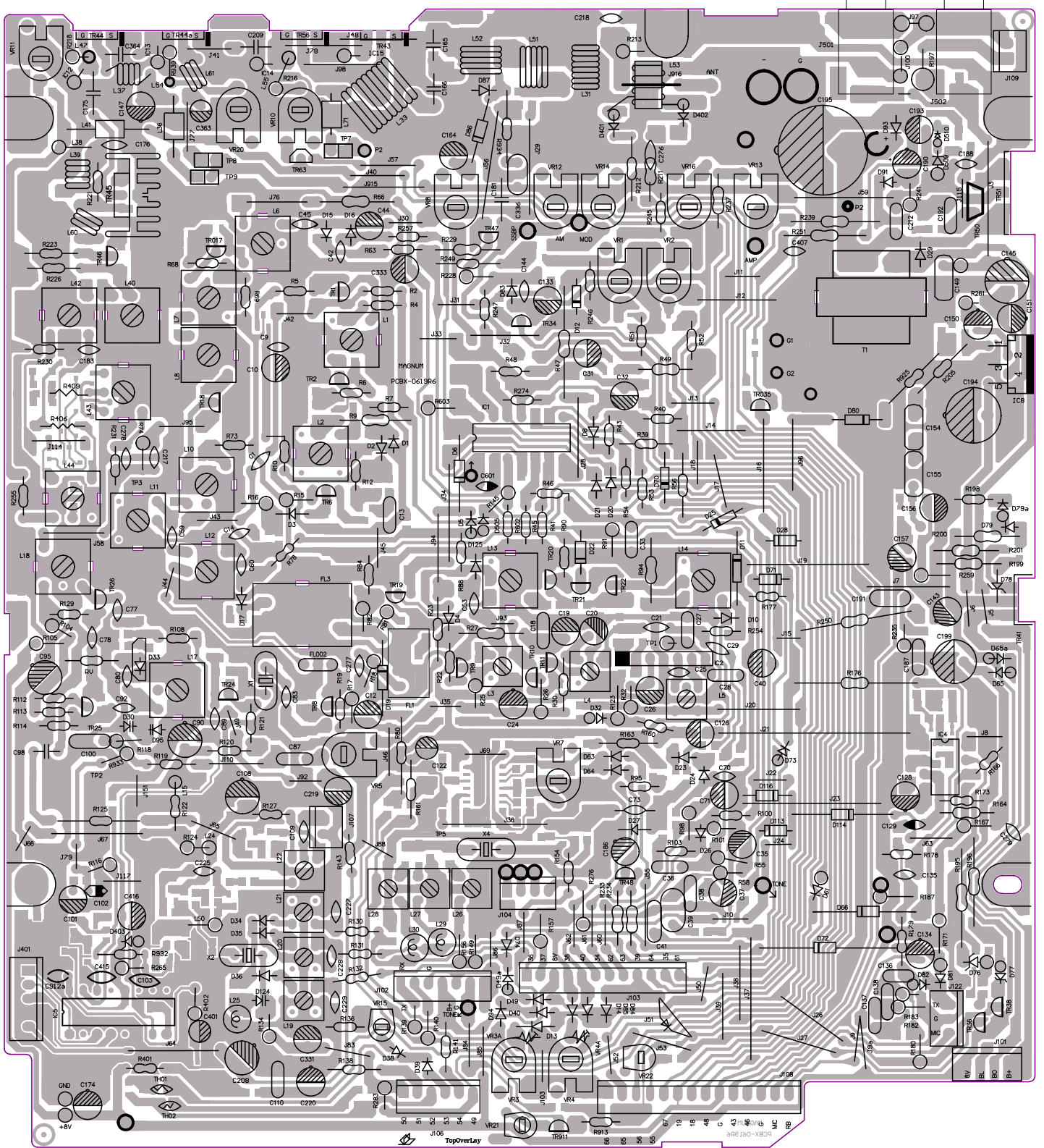
PCBX-0635R3 TOP LAYER  
MAGNUM S9 FREQ.COUNTER CPU BOARD



PCBX-0635R3 TOP LAYER  
MAGNUM S9 FREQ.COUNTER CPU BOARD



PCBX-0635R3 BOTTOM LAYER  
MAGNUM S9 FREQ.COUNTER CPU BOARD



PCBX-0619R6 TOP LAYER  
MAGNUM S9 MASTER BOARD



