

**DEM 2400-144RX Receive converter SN\_\_\_\_\_**

**Specifications**

Frequency:	2400 MHz. = 144 MHz.
Noise Figure and Gain:	<1.3 dB nom. > 20 dB Gain
DC Power:	11 - 15.5 VDC @ 0.5 A
Frequency Offset	_____ kHz.

**Operation:**

The 2400-144RX receive converter is a device that will receive all 13 cm signals generated by AO-40 and convert them to the 2 meter amateur band. In the standard converter, 2400 MHz equals 144 MHz. This conversion factor may be altered by installing a different crystal in the local oscillator if required for the 2446 MHz band when it becomes available for use. The converter requires standard 12 volt DC and should be supplied through the IF coax. There is a "Test" connector that may be used for the DC supply voltage if the converter is not mounted at the antenna.

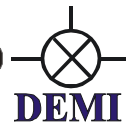
Connecting to your system is simple. The converter should be mounted as close to your antenna as possible. Weather proof all connections. Use a high quality coax for the IF line. This coax should be low loss at 144 MHz. and be able to handle 0.5 A of current so a RG8 type coax is acceptable. The coax should be connected to a 144 MHz. receiver or transceiver of any quality. If your receiver is not capable of supplying +12 VDC through the coax connector, a Low frequency Bias T similar to the Down East Microwave BT-L may be used. Powering the 144 MHz. equipment on should also supply the converter with DC power. You will immediately begin receiving.

**Additional Options:**

There is one additional option that may be implemented depending on your requirements. If you have a abnormal length of IF coax or a poor quality type, a IF gain stage may be installed or ordered with the converter that will provide an additional 10 dB of IF gain. This option will not improve the receiver sensitivity or noise figure. The gain may then be adjusted with the variable attenuator built into the IF circuitry of the converter.

**Cautions:**

If this receive converter is connected to a transceiver, caution must be taken to be sure that a transmitted signal will not appear on the IF coax. Remove all microphones and CW keys from the transceiver to prevent inadvertently transmitting. A transmitted signal above 250 mW will burn out the variable attenuator but will not damage the mixer. A instantaneous transmission of 25 watts or higher may damage the mixer.



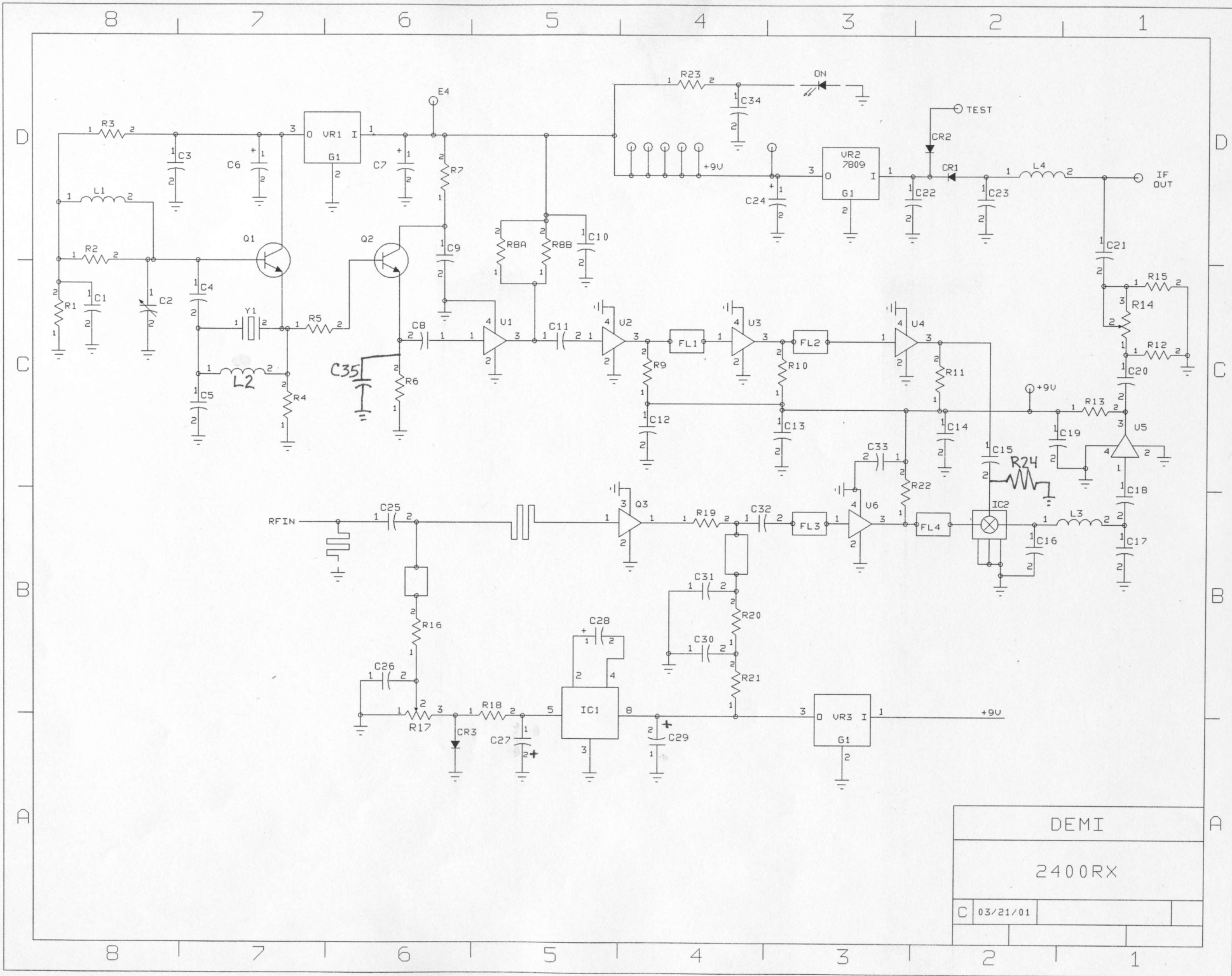
### 2400 RX Converter Parts List

All components are Surface Mount components except those in italic lettering. Capacitors are in  $\rho F$  unless otherwise noted. Resistors are in Ohms and 1206 size unless otherwise noted.

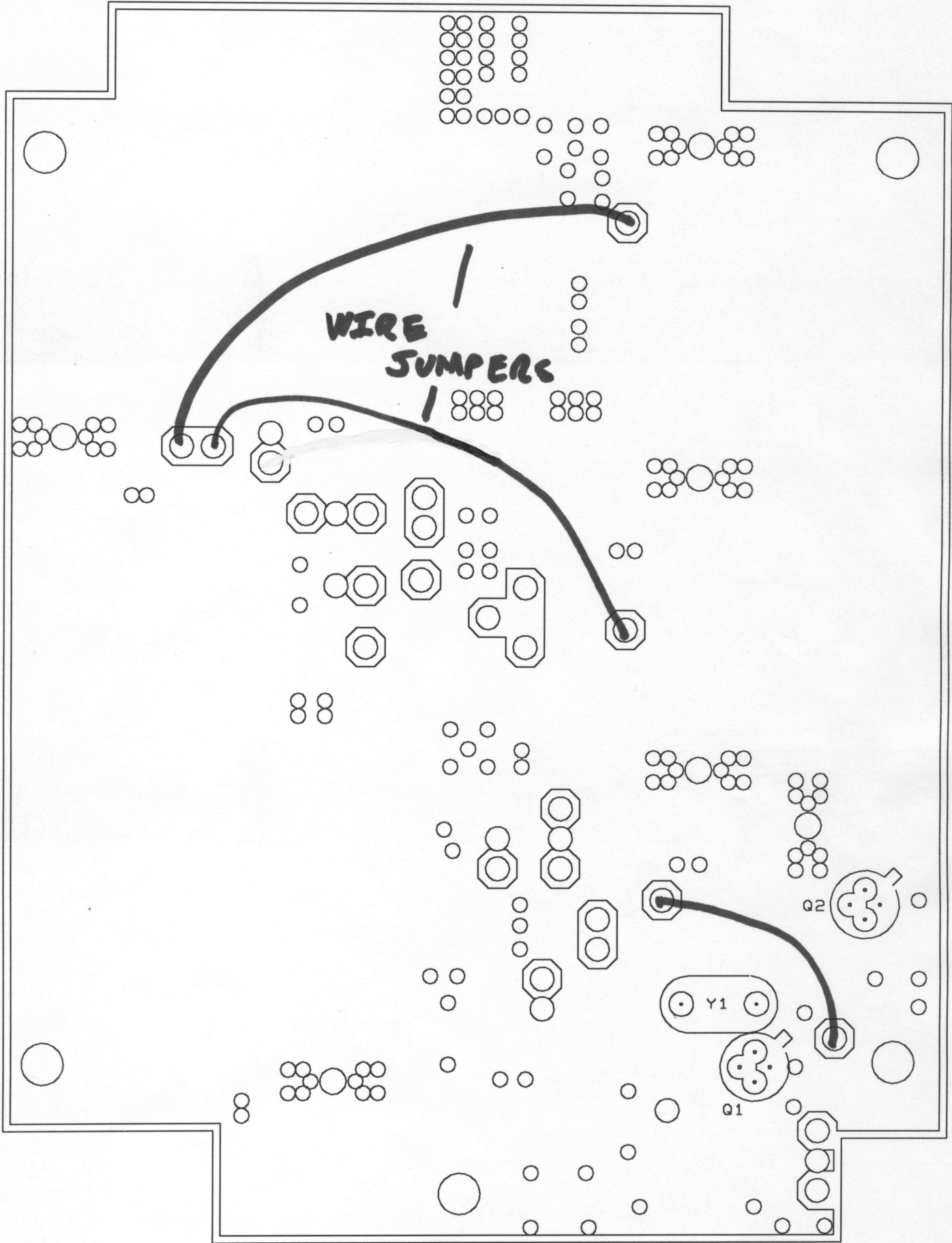
C1 0.01 $\mu F$	C18 100	C35 22	R5 51	R21 100
C2 <i>Piston 1-4</i>	C19 0.1 $\mu F$	<i>CR1 1N4001</i>	R6 100	R22 130
C3 0.01 $\mu F$	C20 100	<i>CR2 1N4001</i>	R7 100	R23 1K
C4 18	C21 100	CR3 MMBD914	R8A 220	R24 51 $\Omega$ (0805)
C5 22	<i>C22 100<math>\mu F</math> Elect.</i>	IC1 7660SMD	R8B 220	<i>PTC-60</i>
C6 1.0 $\mu F$ Tant.	C23 100	IC2 ADE-3G	R9 130 $\Omega$	U1 MAR3
C7 0.1 $\mu F$	<i>C24 2.2<math>\mu F</math> Elect.</i>	<i>L1 4T 1/8"</i>	R10 130	U2 ERA-2
C8 100	C25 8.2 $\rho F$ ATC	<i>L2 0.1<math>\mu H</math>(black-brown)</i>	R11 130	U3 ERA-2
C9 0.01 $\mu F$	C26 0.1 $\mu F$	<i>L3 5T 1/8"</i>	R12 220	U4 ERA-1
C10 0.1	<i>C27 10 <math>\mu F</math> Elect.</i>	<i>L4 1.0<math>\mu H</math></i>	<i>R13 150<math>\Omega</math> 1/2W</i>	U5 MAV11 (opt)
C11 100	<i>C28 10 <math>\mu F</math> Elect.</i>	Q1 2N5179	<i>R14 1K POT</i>	U6 ERA2
C12 0.1 $\mu F$	<i>C29 10 <math>\mu F</math> Elect.</i>	Q2 2N5179	R15 220	VR1 78L05
C13 0.1 $\mu F$	C30 0.1 $\mu F$	Q3 NE3210	R16 51 (0805)	VR2 78S09
C14 0.1 $\mu F$	C31 10	R1 560	R17 1K POT	VR3 78L05
C15 10	C32 10	R2 1K	R18 5.1K	Y1 188.000
C16 18	C33 0.1 $\mu F$	R3 1K	R19 15	1/2" Green wire
C17 18	C34 0.1 $\mu F$	R4 100	R20 51 (0805)	

### 2400-144RX Complete Kit Hardware Parts List

1- Machined Enclosure with gasket	1 - pre-machined alum. block	3"- RG-188 coax
4- Cover screws	1 - # 4 Ground Lug	1 - LED
1- Single Hole Type "N" connector	3 - 4-40 x 3/16" screws	1- 1000 $\rho F$ leaded
1- 3/4" Panel Type "N" connector	3- 4-40 x 3/8" screws	1- 4-40 nut
1- RCA connector	4 - 6-32 x 3/8" screws	



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2400RX			
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2400RX

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2400-144RX

