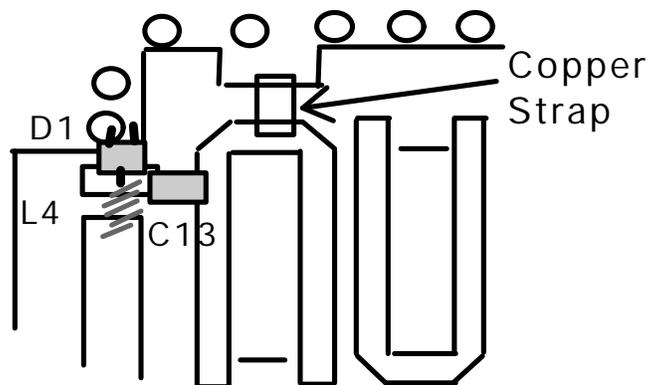


Design Note

From: DEMI R&D Dept.
 To: ALL DEM2304-144 kit builders
 DN#: 012
 Date: August 15, 2002
 Re: MICRO LO drive level in 2304-144K and CK

PROBLEM: It has been found that with the most recent run of MICROLO PC boards, all output frequencies below 1100 MHz. will have low power output levels. The DEM2304-144 requires a LO frequency of 1080MHz. The output level generated at 1080 MHz. borders on drive starving the LO multiplier stage in the DEM 2304-144 Transverter.

SOLUTION: To use the newest generation of MICROLO successfully, one wound inductor will need to be changed and a copper strap will need to be added to the circuit board. Review the parts list on page 2 of the MICROLO. Find L4. It is listed as a 4 turn inductor. Change L4 to a 5 turn inductor. Do not change the 1/8" ID. You may now assembly and test the MICROLO as described in its assembly manual. All test points are as stated. When assembly and test is complete, if you do measure the output power you will find it to be below +0dBm. The last step is to add a small copper strap as shown in the diagram below to short the base of the hair-pin filter to ground. This lowers the frequency of the filter enough to pass the 1080 MHz. harmonic. If the output power is now measured, it will be greater than +5 dBm. + 3dBm is the minimum requirement. If the output is still low by a dB or two, you may stretch or compress L4 to optimize. If the output power is down by 5 dB or more, look for other problems starting with the correct operating voltage.



FOR BEST OPERATION: As always with Down East Microwave Inc. products, if you have the appropriate test equipment, you may further optimize the filters for best overall performance. Adjust for best spectral purity keeping a minimum of +3dBm output.

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