Down East Microwave Inc.

Design Note

DEMI

From: DEMI R & D Dept.

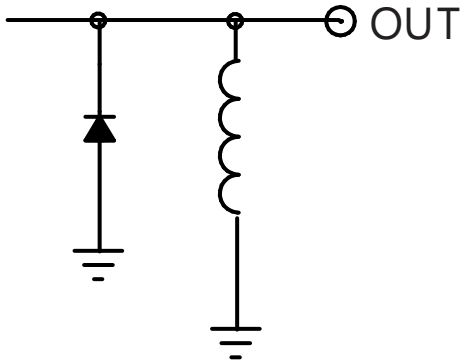
DN#: 026

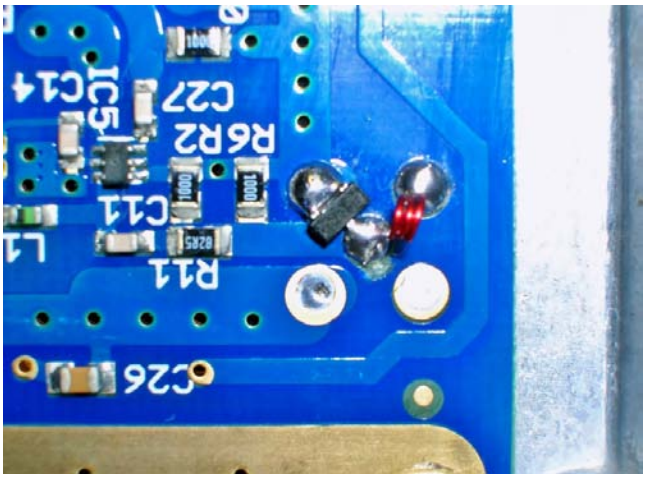
Date: NOV, 22, 2011

Re: Multiplier circuit for WSSA or A-32

PREFACE: This document will show how to install a multiplier circuit on the WSSA or A-32 for producing harmonics through 24 GHz.

CIRCUIT AND INSTALL: The circuit is comprised of a HSMS 2800 or similar series Schottky diode and a DC return (3 turn inductor) on the output connecter in the WSSA, or on the output of an A-32 board. It is not necessary to use a surface mount diode unless you are concerned about signal level at 24 GHz. The schematic and layout on the board is shown below.





TESTING: Testing is simple. It either produces harmonics or it doesn't! Levels should be similar to the list below:

Band	*Multiplier*	*WSSA Output Frequency and Output Power*	*Frequency and minimum Signal level*
13cm	2	1152.022472 MHz. +5 dBm	2304.044944 @ -17dBm
12cm	2	1200.500 MHz. +5dBm	2401.000 @ -20dBm
9cm	3	1152.022472 MHz. +5 dBm	3456.067416 @ -27dBm
5cm	5	1152.022472 MHz. +5 dBm	5760.112360 @ -43dBm
3cm	9	1152.022472 MHz. +5 dBm	10368.202248 @ -67dBm
1cm	21	1152.022472MHz. +5dBm	24192.471912 @ -105dBm