

# VCO-POS

## Function

The device is a RF source based on the Minicircuit's POS range of voltage controlled oscillators. The output is a fixed amplitude radio frequency signal with frequency tunability over the range specified by the POS VCO.

## Performance



## Date

Project date: May 2011

## Developer

Hrishikesh Kelkar, kelkar@iqo.uni-hannover.de

## User

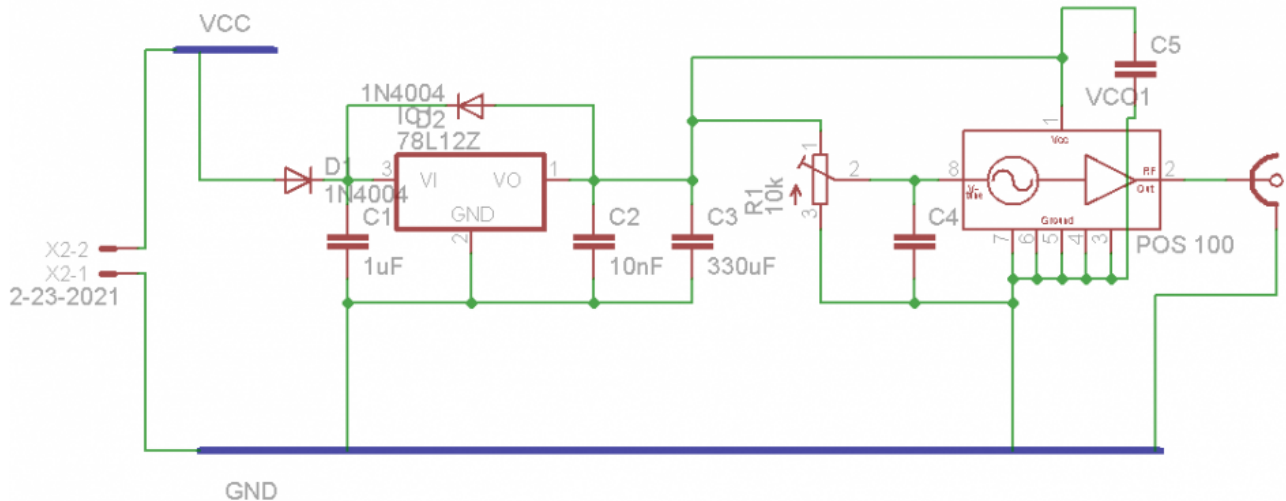
This VCO (qty:2) is currently being used in the Magnesium experiment.

## Operating principle

The circuit is based on a Minicircuits POS VCO. A stabilized voltage is provided to the POS oscillator, which creates a RF output for EOMs or AOMs. A wide range of RF frequencies can be produced by simply choosing the POS oscillator of desired frequency.

## Circuit diagram

- The [Schematic](#) in PDF-Format
- The source files can be obtained from the [Download-page](#) of the wiki. (Direkt-Link: [Schematic, Board](#))



## Layout

- Dimensions of the PCB: 50 mm x 28.5 mm
- Supply voltage: +18V
- Input voltage: +18V max
- The [Bestückungsdruck](#) im PDF-Format
- Die [gezippten Gerberdaten](#) für die Bestellung der Platine
- Die Source des Layouts im pcb-Format liegt auf der [Download-Seite des Wiki](#)

## Housing



## Test

Before you solder the POS VCO, check if the voltage at the pad of pin 1 is correct. Also check if the voltage of pad 8 can be tuned using the potentiometer. Once the VCO is soldered, tune the frequency via the poti and look for the bandwidth. It should be within the specified range (e.G. POS-100: 50 - 100 MHz)

## Photos

## Price estimate

What	How many	E-Preis (€)	Preis (€)	Note
PCB	1x	4	4	60 boards for 240 € from Basista
Housing	1x	??.??	??.??	
POS-x	1x	60	60	...
R,C	5x	0.02	0.10	
Diode	2x	0.05	0.10	
Voltage reference	1x	0.50	0.50	
<b>Sum</b>			<b>64.70 €</b>	

## Meckerliste

Was für die nächste Version zu tun ist: (✗: verworfen, ✓: in Arbeit, ✓: im Schaltplan, aber noch nicht im Layout, ✓: erledigt)

- ✓ Different voltage reference than 12 V, since you aren't able to tune the full range with only 12 V. Solution: Use 78L15 as reference.
- Add a better voltage reference like REF02 or similar which is way more stable than 7815 so you get less frequency drifts.

From:

<https://elektroniq.iqo.uni-hannover.de/> - **ElektronIQ**

Permanent link:

<https://elektroniq.iqo.uni-hannover.de/doku.php?id=eigenbau:vco-pos:start>

Last update: **2017/04/18 13:34**

