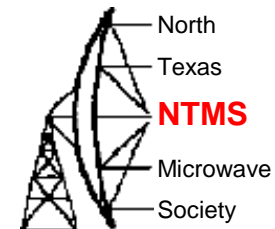


# Low Cost Surplus 10 MHz Reference

Greg McIntire, AA5C

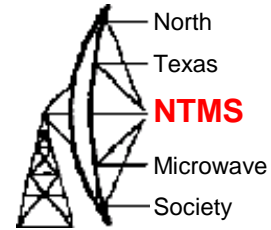
March 5, 2022

# Surplus 10 MHz OCXO Specifications



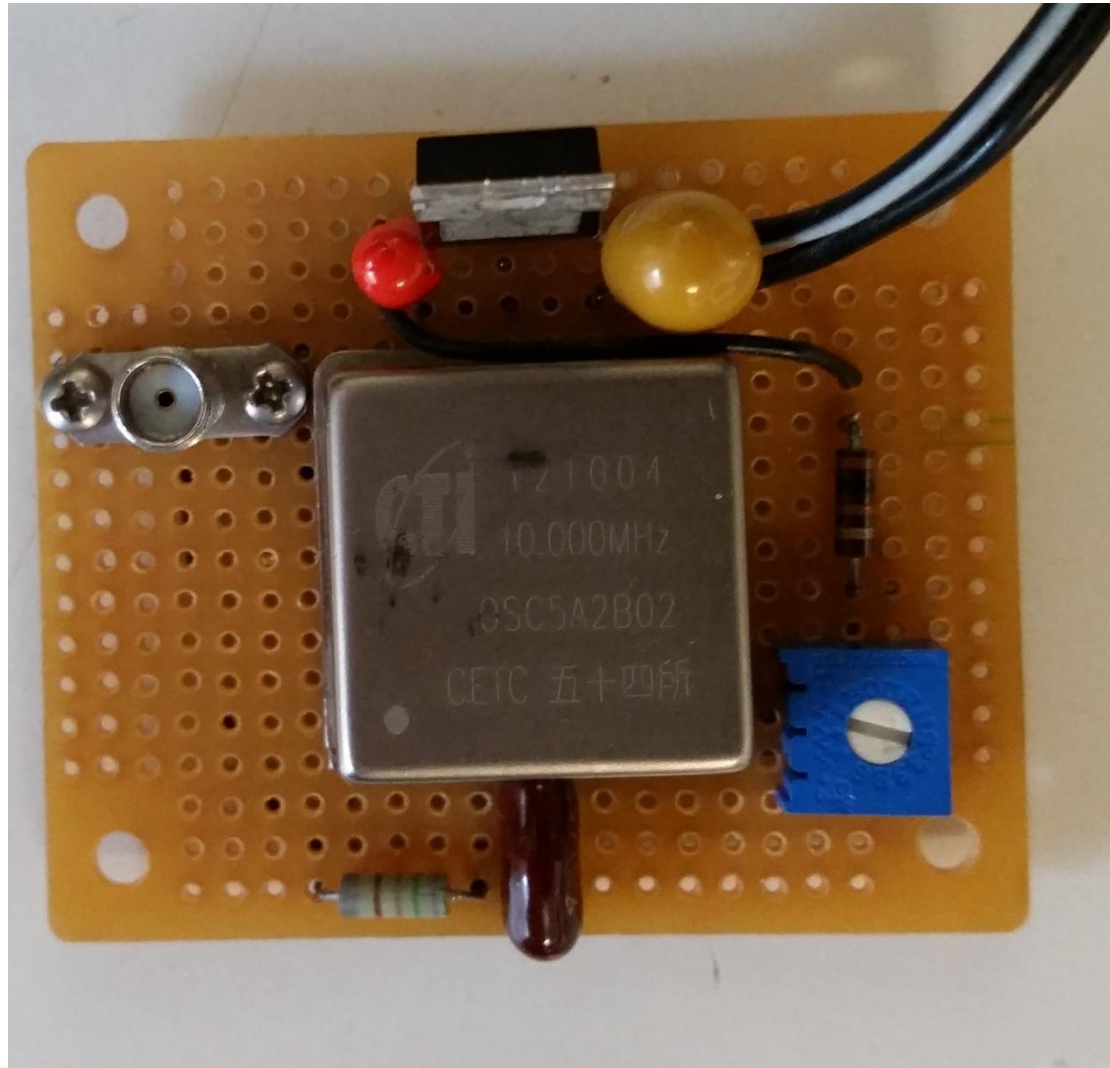
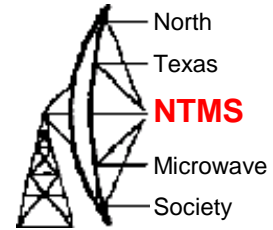
- CTI OSC5A2B02 oven controlled crystal oscillator
- 10 MHz square wave output – HCMOS level
- Stability: +/-10 PPB
- 5 volt supply
  - 600 mA at turn on
  - 250 mA stable state
- Control Voltage 2.0 +/- 2.0 V
- Phase Noise
  - -80 dBc @ 1 Hz
  - -120 dBc @ 10 Hz
  - -140 dBc @ 100 Hz
  - -145 dBc @ 1 KHz
  - -150 dBc @ 10 KHz

# Parts to Make a Complete Reference

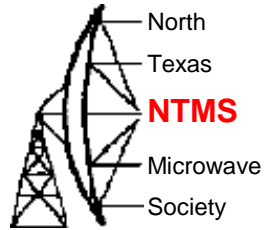


- Prototyping board
  - I used a 2 inch x 2.25 inch board
- 5V regulator and heat sink (as required)
- Output connector
- 500 ohm potentiometer and 100 ohm resistor for trimming
  - 100 ohm to  $V_{cc}$  then to top side of pot
  - Low side of pot to ground
  - Wiper to  $V_{ref}$
- L-C low pass filter (optional for sine wave output)
  - 1.1  $\mu\text{H}$
  - 470 pF cap

# Completed Reference



# Summary



- OCXO is less than \$5 each on eBay (min buy is 2)
- A little searching on the web yielded a spec sheet
- Have to unsolder it from the circuit board it was mounted on
- Pins on can are not on 0.1 inch spacing so some drilling on the prototyping board was needed
- Long term monitoring with a frequency counter has shown the unit to be very stable over time and temperature