Overview

This application note provides instructions for setting the nominal frequency of the Q-Tech QT800 TCXO (QPDS-0138) using an external adjustment resistor. This sets the TCXO to the factory calibrated nominal frequency to meet the specified frequency over temperature stability.

External Adjust Resistor Connection

The external adjust resistor (EXTADJ) is connected from the corresponding pin on the QT800 Series TCXO to ground. This resistor provides a means to adjust the nominal output frequency of the oscillator.

Determining the Resistor Value

Data Pack Reference: The external adjust resistor value is determined by Q-Tech during production. Each unit has a specific resistor value that is documented in the data pack provided with the shipment. This value is listed for each individual serial number.

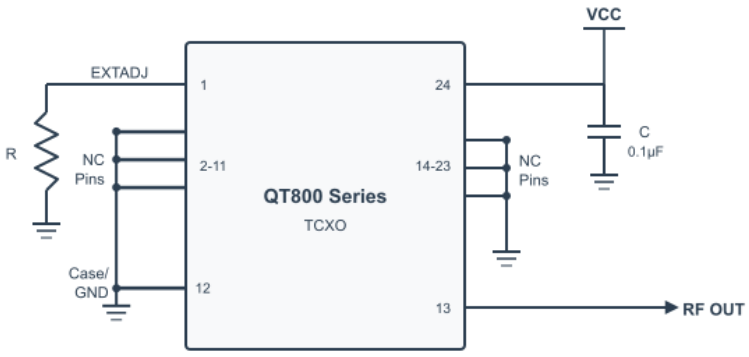
Typical Range: The resistor values can vary between 3000Ω and 9500Ω. However, the typical resistor value is around 6800Ω at 12V, 5500Ω at 5V, or 5875Ω at 3.3V.

Recommendation: To achieve the specified frequency stability, we recommend choosing a resistor value as close as possible to the value given in the data pack for each specific unit.

Implementation

The figure below shows an example circuit configuration for the external adjust resistor. While this example uses the 24-pin flat pack pinout, the same general implementation applies to all available package types.

QT800 TCXO - External Adjust Configuration (24-Pin FP)



Notes:
- External adjust resistor (R) value: 3000Ω – 9500Ω. Refer to data pack for specific value.
- Decoupling capacitor (C): 0.1 µF capacitor placed as close to VCC pin as possible (recommended).
- It is recommended to ground all NC pins if possible.

Revision Log

DCO	Revision	Revision Summary	Page(s) Affected	Date
	-	Initial Release	-	01/30/2026