

95 GHz Extended Interaction Oscillator **Model VKB2437**

INTRODUCTION

CPI Canada (CPI) has manufactured millimeter wave Extended Interaction Klystron (EIK) vacuum tubes since 1969. EIKs generate or amplify millimeter wave energy through interaction between a linear electron beam and resonant cavities similar to conventional klystrons. EIKs achieve useful performance by incorporating a slow wave biperiodic ladder circuit to extend the interaction between electron beam and cavities. This allows EIKs to operate up to 280 GHz to-date at power levels suitable for a variety of applications

SCOPE

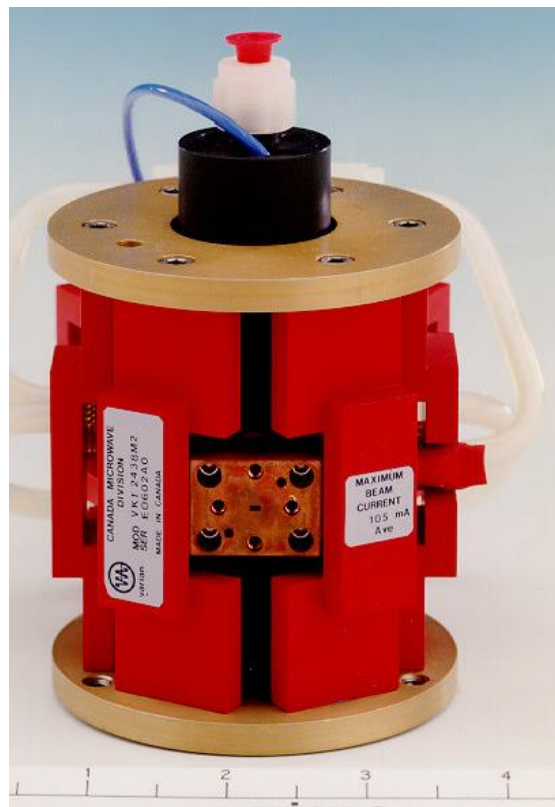
This document details the performance specifications for the VKB2437** Extended Interaction Oscillator (EIOs). The VKB2437** is a 95.0 GHz CW EIO manufactured to Communications & Power Industries Canada Inc. commercial workmanship practices. This EIK is compatible with CPI CW power supply model VPW2838.

TYPICAL PERFORMANCE

Center Frequency	95.0 GHz
Mechanical Tuning Range	2.0 GHz
Electronic Tuning Range	(200) MHz
Power Output	10.0 W min.
Test Frequencies	94,95,96 GHz
Temperature Coefficient	-(2.0) MHz/°C max.
Cathode Modulation Sens.	(0.3) MHz/V max.
Pulling Figure	(100) MHz max.

TYPICAL POWER SUPPLY REQUIREMENTS

Cathode Voltage V_K	9.0 kV max.
Cathode Current	100.0 mA max.
Anode Voltage V_A	6.5 kV max.
Anode Current	+5.0, -1.0 mA max.
Body Current	10.0 mA max.
Heater Voltage	6.3 V
Heater Current	1.1 A max.
Heater Surge Current	3.0 A nom.
High Voltage Delay (after heater on)	2.0 minutes min.



COOLING

Coolant Type	deionized water
Total Flow Rate	1.0 L/minute min.
Body Flow Rate	0.5 L/minute min.
Tuner Flow Rate	0.1 L/minute min.
Inlet Water Temperature	30.0 °C max.
Coolant Pressure Drop	200 kPa max.

MECHANICAL

Waveguide	RG-138/U(WR8)
Waveguide Flange	Mates with UG387/U
Waveguide Pressurization	N/R
Input Power Connector	Flying Leads
Lead Length	45.0 cm min.
Coolant Hose Connectors	Swagelok type for 6.35mm (1/4") tubing
Number of Complete Tuning Cycles	1000 min.
Overall Dimensions	See Outline Dwg.
Weight	4.5 Kg max.