



THE VCO COMPANY THAT IS SETTING THE STANDARD FOR QUALITY, CUSTOMER SERVICE & RELIABILITY





## • About Emhiser Micro-Tech

- Founded in 1992 by Emhiser Research Inc.
- Focused on Voltage Controlled Oscillator (VCO) design and manufacturing.
- Supporting Defense, Aerospace, and Commercial VCO markets for over 20 years.
- Over 400 active VCO models in 5 series and 13 different packages.
- Over 100 customers internationally.





## • EMT VCO Design Capabilities

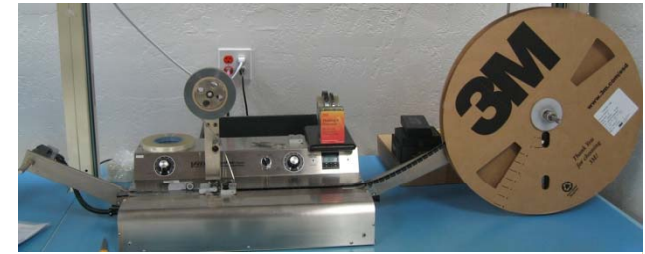
- Operating frequencies up to 10 GHz.
- Narrow band to wide band.
- Low power to medium power.
- Buffered or non-buffered.
- Cost competitive with high performance, high reliability VCOs.
- Surface mount or through-hole packaging available.
- Extended temperature range available.
- Hermetically sealed packaging available.
- Lead and RoHS compliant options available.
- Extremely low phase noise, linear tuning, low harmonics, and low load-pulling models available.



## • EMT Design Capabilities Cont..

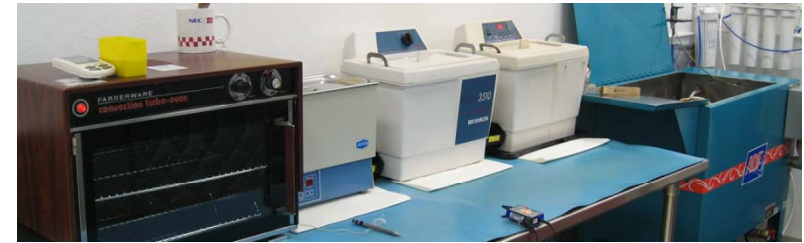
- Over 20 years experience supporting defense, aerospace, and commercial industries with several hundred existing designs.
- Experienced design and engineering team.
- Complete engineering backup and support from other Emhiser companies (ERI, ETTI, and ERL). Please visit [emhiser.com](http://emhiser.com) for more information.
- State of the art design software and equipment.
  1. Microwave Office design platform.
  2. Automated VCO testing station.
  3. Harmonics and modulation bandwidth test setups.
  4. Load-pulling test setups.
  5. Phase noise test setups.
  6. Temperature controlled test chamber.
  7. Spurs test setups.
  8. Vibration and Shock test setup.





- EMT's Manufacturing Capabilities
  - From prototyping quantities to mass production quantities.
  - In-house Pick-and-Place machine for quantity orders.
  - Experienced and certified assemblers for manual small quantity orders.





## • EMT's Testing Capabilities

- Automatic testing software and stations.
- Harmonics and modulation bandwidth test setups.
- Load-pulling test setups.
- Phase noise test setups.
- Temperature test setups.
- Spurs Test setups.
- Vibration and Shock test setup.
- Extra tests available on production units.

**EMHISER MICRO-TECH**  
 P.O. Box 7108, Old Hwy 40 West, Reno, Nevada 89439  
 Ph: (775) 345-0483 Fax: (775) 345-2484  
 Web: www.emhiser.com/usa e-mail: wcd@emhiser.com

Voltage Controlled Oscillator (VCO)

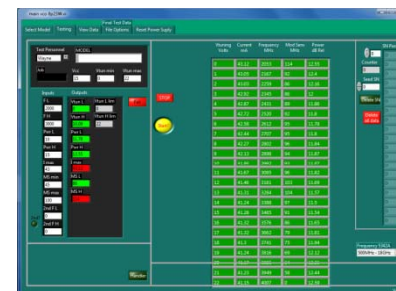
MODEL:

FEATURES

	Freq. MHz/V	Tuning Voltage	Power Out dBm	Mod. Sens. MHz/V	Current mA	Supply Volt.
Low	2000	0.00	11.78	86.00	42	
Typ.				93.00	43	15
High	3000	10.09	12.55	114.00	43	

TEST

Tuning Voltage (V)	Current (mA)	Frequency (MHz)	Mod. Sens. (MHz/V)	Power Out (dBm)
0.0	43.1	2053.0	114.0	12.6
1.0	43.0	2167.0	92.0	12.4
2.0	43.0	2259.0	86.0	12.2
3.0	42.9	2345.0	86.0	12.0
4.0	42.9	2431.0	89.0	11.9
5.0	42.7	2520.0	92.0	11.8
6.0	42.6	2612.0	95.0	11.8
7.0	42.4	2707.0	95.0	11.8
8.0	42.3	2802.0	96.0	11.8
9.0	42.1	2898.0	94.0	11.9
10.0	41.9	2992.0	93.0	11.9
11.0	41.7	3085.0	96.0	11.8
12.0	41.5	3181.0	103.0	11.7
13.0	41.3	3284.0	104.0	11.6
14.0	41.2	3388.0	97.0	11.5
15.0	41.3	3485.0	91.0	11.5
16.0	41.3	3576.0	86.0	11.7
17.0	41.3	3662.0	79.0	11.8
18.0	41.3	3741.0	75.0	11.9
19.0	41.2	3816.0	69.0	12.1
20.0	41.2	3885.0	64.0	12.3
21.0	41.2	3949.0	58.0	12.4
22.0	41.1	4007.0	0.0	12.6





## • EMT's Quality System

- System Based on ISO 9001:2008
- Assemblers, Technicians, & Engineers Certified to IPC J-STD-001 & IPC-A-610
- Three cycles of temperature stressing on every VCO EMT ships.
- Every VCO will be pre-tested before temperature stressing and final tested before the shipment.
- Test Data Available on each shipped VCO.





# • EMT's VCOs

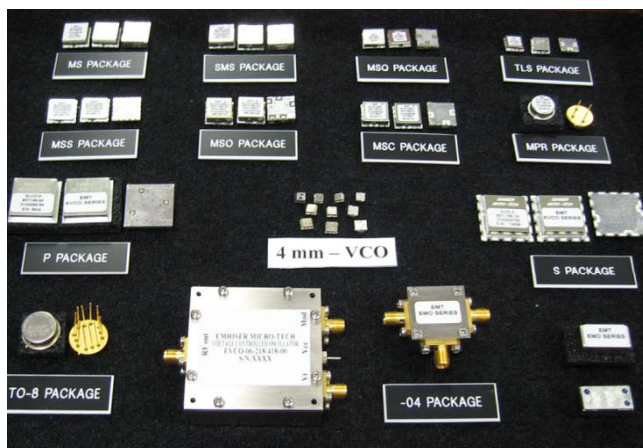
## • Available in 5 series

1. EVCO – Standard Series. Lowest cost.
2. EWO – Wideband Series.
3. EMO – Military / Space Series.
4. EBO – Buffered VCO Series.
5. ECRO - Ceramic Resonator Series.

## • Available in 13 packages

please visit our website for details:

[http://www.emhiser.com/index.php?option=com\\_product&task=series\\_package&company\\_id=1001](http://www.emhiser.com/index.php?option=com_product&task=series_package&company_id=1001).



Emhiser Micro-Tech  
 VCOs  
 EVCO - Standard VCO Series  
 EWO - Wideband VCO Series  
 EMO - Military/Space VCO Series  
 EBO - Buffered VCO Series  
 ECRO - Ceramic Resonator Series

About Us | Site Map | Careers | Privacy Policy

© 2012 Emhiser.com. All rights reserved.

Model Number	Package dimensions	Frequency (MHz)		Tuning voltage (V)		Power (dBm)		Power Supply Vcc (VDC)	Power Supply Icc (mA)	Tuning Sensitivity (MHz/V)		Harmonics 2nd <(dBc)	Harmonics 3rd <(dBc)	Phase Noise @ 100kHz offset (dBc/Hz)	Phase Noise @ 1MHz offset (dBc/Hz)	Modulation Bandwidth (3dB) (MHz)	Temperature Range
		Min	Max	Min	Max	Min	Max			Min	Max						
EVCO-MPR-109/208-06	MPR - 0.50" DIA. x 0.17" CAN"	1050	1800	0	10	10	15	10	42	40	95	-10	-20	-90	-115	>10	-20°C to +70°C
EVCO-MPR-127/247-00	MPR - 0.50" DIA. x 0.17" CAN"	120	240	1	14	10	15	12	25	9	10	-10	-10	-76	-129	<5	-20°C to +70°C
EVCO-MPR-139/230-00	MPR - 0.50" DIA. x 0.17" CAN"	1300	2300	1.2	12.6	10	15	15	35	55	110	-10	-25	-95	-115	>10	-20°C to +70°C
EVCO-MPR-149/210-00	MPR - 0.50" DIA. x 0.17" CAN"	1400	2100	0	10	10	15	15	35	60	90	-10	-20	-95	-115	>10	-20°C to +70°C
EVCO-MPR-157/307-00	MPR - 0.50" DIA. x 0.17" CAN"	150	300	0	20	10	15	12	25	5	15	-15	-10	-105	-125	>10	-20°C to +70°C
EVCO-MPR-158/258-00	MPR - 0.50" DIA. x 0.17" CAN"	1500	2500	1.5	16.3	10	15	15	40	45	90	-10	-20	-95	-115	>10	-20°C to +70°C
EVCO-MPR-206/406-00	MPR - 0.50" DIA. x 0.17" CAN"	20	40	0	20	11	16	12	25	1	2	-10	-10	-115	-135	<5	-20°C to +70°C
EVCO-MPR-208/208-00	MPR - 0.50" DIA. x 0.17" CAN"	2000	3000	0	18	10	15	15	35	45	100	-10	-20	-80	-105	>10	-20°C to +85°C
EVCO-MPR-208/208-02	MPR - 0.50" DIA. x 0.17" CAN"	2000	3000	0	18	10	15	15	35	40	90	-10	-25	-90	-115	>10	-20°C to +70°C
EVCO-MPR-208/208-04	MPR - 0.50" DIA. x 0.17" CAN"	2000	3000	0	18	10	15	12	45	50	100	-15	-20	-85	-105	<5	-20°C to +70°C
EVCO-MPR-208/408-01	MPR - 0.50" DIA. x 0.17" CAN"	2000	4000	0	20	8	12	15	40	40	300	-12	-20	-90	-114	N/A	-20°C to +70°C
EVCO-MPR-218/238-01	MPR - 0.50" DIA. x 0.17" CAN"	2150	3300	0	18	10	15	18	40	50	125	-10	-35	-95	-120	>10	-20°C to +70°C
EVCO-MPR-248/278-00	MPR - 0.50" DIA. x 0.17" CAN"	2400	3700	0	18	10	15	15	40	65	130	-15	-20	-90	-115	N/A	-20°C to +70°C
EVCO-MPR-256/506-00	MPR - 0.50" DIA. x 0.17" CAN"	25	50	0	20	11	16	12	20	1	2	-10	-10	-115	-135	<5	-20°C to +70°C
EVCO-MPR-257/507-00	MPR - 0.50" DIA. x 0.17" CAN"	250	500	0	20	10	15	15	35	10	20	-10	-15	-100	-120	<5	-20°C to +70°C

First Page ... 1 2 3 4 5 6 ... Last Page



## • EMT's Customer Highlights

- AEROFLEX
- AGILENT TECHNOLOGIES
- ALCATEL
- ANALOGIC CORPORATION
- ANALOG TECHNOLOGIES CORP
- AT&T BELL LABS
- AVNET, INC.
- BIRD ELECTRONICS CORP
- BOEING MILITARY AIRCRAFT & MISSILE SYSTEM
- BOEING COMPANY
- BROADCAST EQUIPMENT CORPORATION
- BROADCAST MICROWAVE SERVICES
- CBOL
- COBHAM DEFENSE ELECTRONIC SYSTEMS CORP.
- CODAN PTY LTD.
- COLBY INSTRUMENTS, INC.
- CompoTEK GmbH
- CROSS TECHNOLOGIES INC.
- dBm, LLC
- DELL-STAR TECHNOLOGIES
- FLEXTRONICS INTERNATIONAL USA INC
- FLUKE
- GLOBAL MICROWAVE SYSTEMS
- GLOBES ELEKTRONIK GMBH & CO KG
- GPV ASIA (THAILAND) CO., LTD
- HERLEY - CTI (WI)
- HONEYWELL
- HUGHES DEFENSE COMMUNICATIONS
- ICOMM TELE LTD.
- IMPULSE TECHNOLOGIES INC
- L-3 COMMUNICATIONS
- L-3 COMMUNICATIONS NOVA ENGINEERING, INC
- LG PRECISION CO., LTD.
- LOCKHEED MARTIN ELEC. SYSTEMS
- M/A-COM INC. / TYCO
- MATEC
- MICRO SYSTEMS, INC
- MINISTRY OF DEFENCE/FDC
- MOTOROLA, INC
- NASA/GSFC
- NATIONAL RESEARCH INSTITUTE OF ELECTRONICS
- NEW TECH VENTURE PTE LTD
- NORTHROP GRUMMAN
- ORION MANUFACTURING INC
- PHOENIX LOGISTICS, INC.
- QUALCOMM INC.
- RAYTHEON
- RESEARCH ELECTRONICS INTERNATIONAL
- RF LABORATORIES, INC
- SAM ELECTRONICS GMBH
- SAMSUNG
- SCS CORPORATION
- SHOSHIN U.S.A., INC
- SIERRA MONOLITHICS, INC.
- SMS TECHNOLOGIES
- SPINNAKER MICROWAVE INC.
- SUNTRON CORP
- TEKTRONIX
- TEN-TEC INC
- TOKO TRADING INC.
- VIASAT, INC
- WORLD MICRO, INC