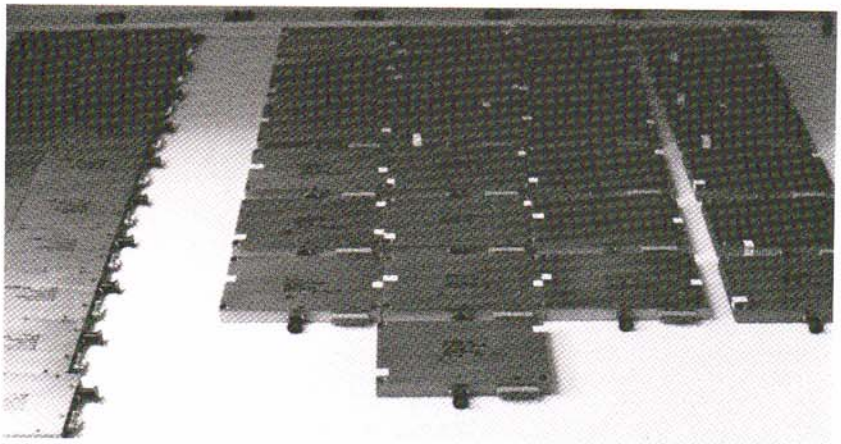
OMNIYIG INC.

Comb Generator with Integrated VCO and Crystal Oscillators

Fast Switching 15 Microseconds



APPLICATIONS

- Octave ECM Systems
- Multioctave
- Frequency Synthesizers
- Frequency Counters
- ECM Receivers

FEATURES

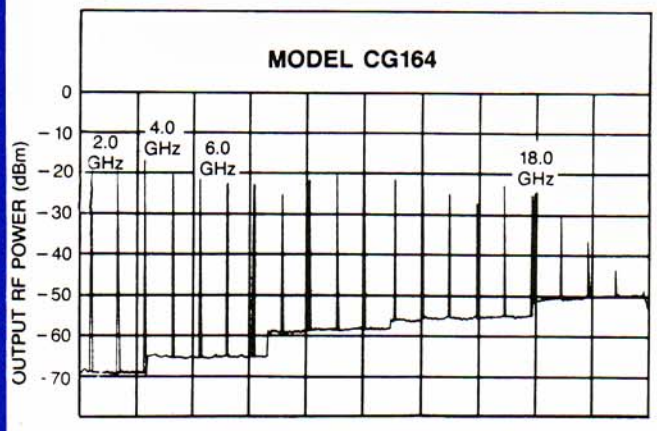
- Fast Switching
- Compact Design
- High Efficiency
- Outstanding Reliability
- Digital or Linear Tuning

OMNIYIG's newest line Model CGXXX Series of Harmonic (Comb) Generators are integrated with (VCO) Variable Control Oscillators and/or with Fixed Crystal Oscillators. These units are designed to offer a broad frequency range output from 1 to 18 GHz. The output frequencies represent multiple harmonics of that input fundamental frequency. The Model CG163 that are integrated with the VCO provide a continuous output frequency multiple harmonic of the respective input VCO variable frequency and for Model CG165 integrated with a fixed crystal oscillator the output frequency is of the multiple of the representative crystal oscillator fundamental frequency.

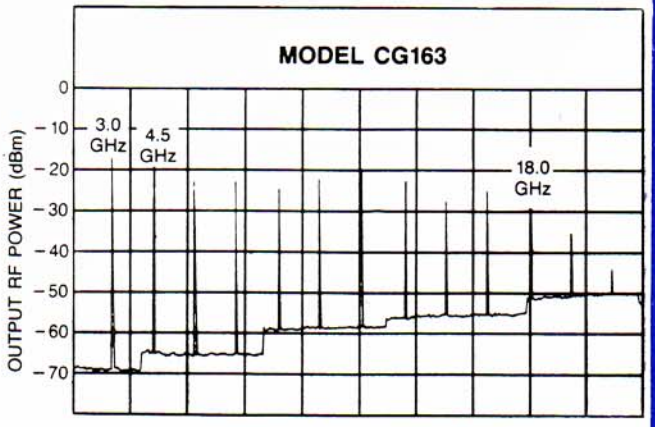
The integrated VCO Crystal/Comb Generators are ideal as Local Oscillators with variable tuning or fixed tuning. These oscillators can be used for multioctave ECM receivers, spectrum analyzers and other microwave systems. The design series Model CG163 are designed with the integrated VCO and are able to provide tuning for the local oscillator in very fast speeds in microseconds and have coverage of the full octave output frequency band in 30 microseconds. The design series models integrated with crystal fixed oscillators provide fixed multiple harmonic outputs up to 18 GHz at stabilities as that of a crystal oscillator.

The integrated VCO/Comb Generator series designed for various input VCO frequency vs. various output frequencies can be redesigned to many other VCO input frequencies vs. output frequencies to customer's requirements. The VCO/Comb Generator series are integrated with a 12-bit TTL driver and are designed to operate to the MIL-E-5400 specification.

TYPICAL PERFORMANCE



OUTPUT HARMONIC FREQUENCIES
(NOTE INPUT FREQUENCY IS 1.0 GHz)



OUTPUT HARMONIC FREQUENCIES
(NOTE INPUT FREQUENCY IS 1.5 GHz)

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ELECTRICAL SPECIFICATIONS

Model #	Input Frequency (GHz)	Output Harmonic	Output Frequency Range (GHz)	Output RF Power (dBm)	FM (KHz)	Outline Drawing
CG162	1.0 – 1.5	2nd	2.0 – 3.0	– 25	200	82466
	1.0 – 1.5	3rd	3.0 – 4.5	– 25	200	
(Variable Input	1.0 – 1.5	4th	4.0 – 6.0	– 25	200	
Frequency)	1.0 – 1.5	6th	6.0 – 9.0	– 25	200	
CG163						
(Variable Input	1.0 – 1.5	8th	8.0 – 12.0	– 30	200	82466
Frequency)	1.0 – 1.5	12th	12.0 – 18.0	– 30	200	
CG164						
(Fixed Input Frequency)	1.0	2nd thru 8th	2.0 – 8.0	– 28	200	82467
CG165						
(Fixed Input Frequency)	1.0	2nd thru 18th	2.0 – 18.0	– 33	200	82467
CG166						
(Fixed Input Frequency)	0.100	10th thru 18th	2.0 – 14.0	– 35	200	82467

ADDITIONAL RF SPECIFICATIONS, ALL MODELS

Switch On/Off Isolation: ..... 25 dBc min.
Switch Time: ..... 15 microseconds
Spurious Outputs: ..... 40 dBc min.
Frequency Stability Pushing Factor: 200 KHz/V max.
Frequency Stability Incidental FM 200 KHz/V max.
LSB Resonance for VCO Units: . 5.5 MHz max.
Weight: ..... 2 ounces

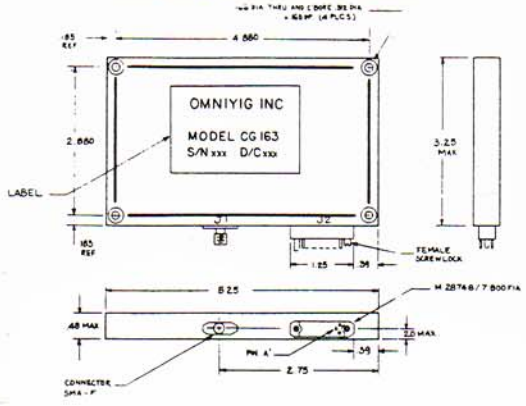
POWER SUPPLY REQUIREMENT, ALL UNITS

Supply Voltage: ..... ±15 V
Supply Current (at +15 V): .... 600 mA
Supply Current (at –15 V) .... 50 mA

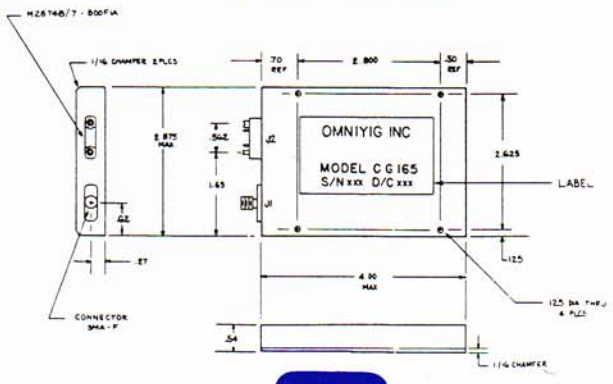
MECHANICAL SPECIFICATIONS, ALL MODELS

Output Connector: ..... 3 mm female
DC Connector (Fixed Crystal Oscillator) M28748/T-B00F1A
DC Connector (Variable VCO Oscillator) M28748/7E00F1A
Dimensions (Fixed Crystal Oscillator): ..... 0.54" H × 2.875" L × 4.0" W
Dimensions (Variable VCO Oscillator): ..... 0.48" H × 3.25" L × 5.25" W
Weight: ..... 18 ounces
Mounting (Fixed Crystal Units): ..... .125 diameter through 4 places
Mounting (Variable VCO Units): ..... .166 diameter through 4 places

OUTLINE DRAWING 82466



OUTLINE DRAWING 82467



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