

# VariClock [VC250M14P] User Manual [Ver1.1]

## Introduction

Thank you very much for purchasing the ultra small/high-speed frequency variable oscillator “VariClock” VC250M14P (VC). VC, available to insert directly into a board pattern for standard DIP-size oscillator, is a frequency adjustable oscillator. VC can generate LVTTL-level clock signal up to the maximum frequency of 400 MHz in case of no load. (Guaranteed 250MHz maximum). Users can easily adjust the frequency by 1MHz step of the clock signal frequency using three rotary switches assembled on the oscillator module. VC can support both 5V and 3.3V power supply by changing jumper socket. Setting status is displayed by Bi-color LED illumination.

## References

Please refer to the below technical document.

No.	Name
VC-AN01E	Guideline for clock implementation
VC-DS01E	VariClock Data sheet

Please download the document from this URL:  
<http://www.dgway.com/products/VariClock>

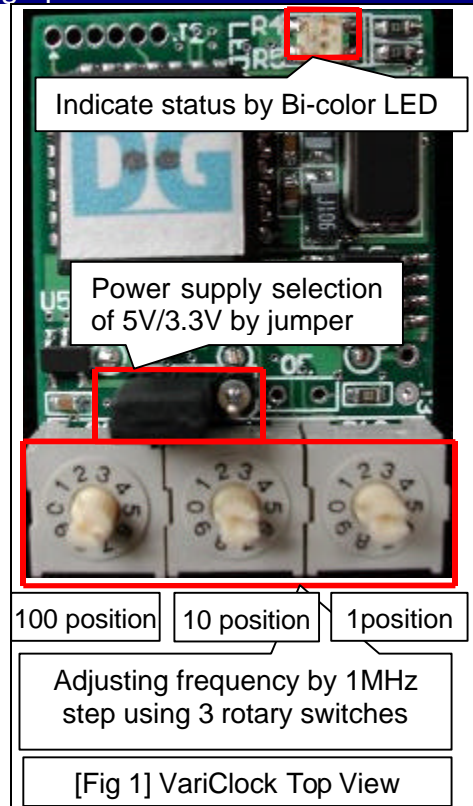
## Important notice

Please note the following points:

- [1] When VC is inserted to the user board, keep the power supply off to the VC. **VC is in a risk of damage by latch up if the module is inserted to the user board with power supply.**
- [2] Before insert VC to the user board, make sure of the right inserting direction. **VC could be fatally damaged if the module is inserted incorrect direction as VCC/GND would counter connect.**
- [3] Before supply power to the user board, make sure that jumper setting of VC has to match with power supply voltage. **VC could be fatally damaged if 5V power supply flow on the 3V jumper setting.**

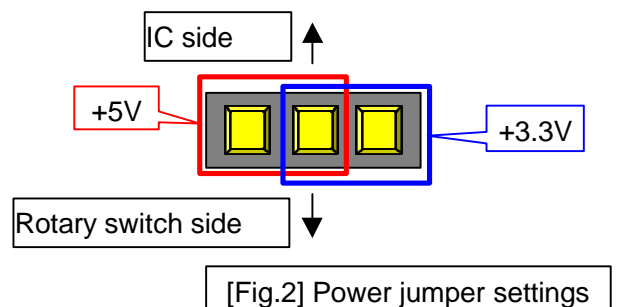
When using VariClock, any damage caused by power supply misuse, Design Gateway Co., Ltd. does not regard the module as in guarantee or allow any kind of return and exchange.

## Setting up



### 1. Setting power jumper

Please set the jumper socket as figure 2 according to the module’s power supply voltage (+ 5V/+3.3V). For example, figure 1 shows the case of 5V.

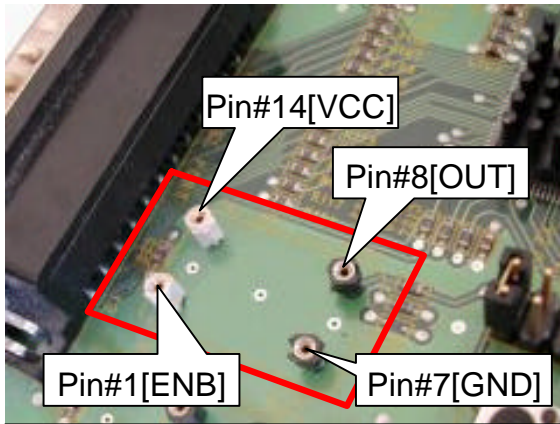


### 2. Setting frequency

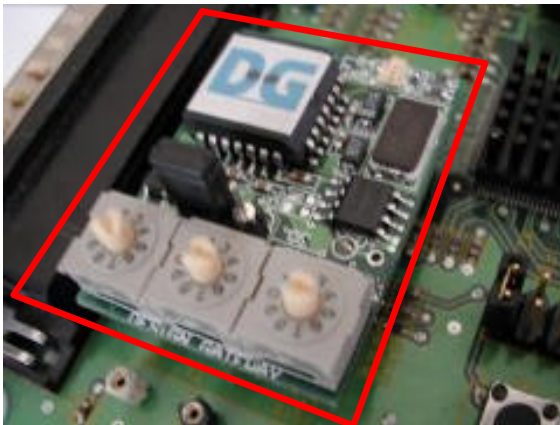
As figure 1, set the frequency using three rotary switches by 1 MHz step. If changing frequency during work, the oscillation will be temporarily unstable.

### Insert into user board

Please insert VC into a user board following figure 3 and 4, be careful of the direction.



[Fig.3] Socket for DIP-type oscillator



[Fig.4] With VariClock attached

### LED Lighting

Indications of Bi-color LED on VC

Color	Setting status
Green	Guaranteed frequency range (25-250MHz)
Orange (Red&Green)	Out of guaranteed frequency range (251-400MHz)
Red	Error setting (0-24 / 401-999MHz) *
No light	Power off or stop frequency by ENB=Low

\* When error setting occurs, clock oscillation will stop.

### Oscillation Control

Supplying external signal into Pin#1 (ENB) of VC can control oscillation as below table:

Pin#1	Oscillation state
Low	Stop oscillation
High/Open	Normal oscillation

### General specification

Please refer to datasheet [VS-DS01J.pdf] for details.

- Size: L30.48mm \* W22.86mm \* H12mm (Without connector protuberance)
- Size weight: Less than 15 grams
- Power Supply: +5V or +3.3V
- Current consumption: Maximum 150mA (in case of no load)
- Clock output: LVTTTL level
- Maximum current: +24 / -24 mA
- Guaranteed frequency: 25MHz - 250MHz (with 20pF loaded)
- Available frequency setting range: 25MHz - 400MHz
- Frequency setting function: By MHz using 3 rotary switches
- Setting frequency unit: 1MHz step
- Frequency error: Less than +0.1% / -0.1%
- External Disable function: Stop oscillation by setting Pin#1-level = Low
- LED indicator function: Indicate setting state and external disable state

### Exemption from responsibility

Notwithstanding any damages that any devices or parts on user board might incur for any reason whatsoever, Design Gateway Co., Ltd. shall be exempted from any responsibility for the above damages. Any guarantee for any functional, electrical, physical quality of VC is lapsed whenever any reconstruction is made to VC.

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