

VWA-10-PSMX-21-21-43

**Clock Generator with
integrated Phase Shifter
@ 21.5GHz and 43GHz**

Description

The **VWA-10-PSMX-21-21-43** is a clock speed doubler with phase shifter for high speed transmission at 43Gbps.

The **PSMX** module integrates two similar phase shifter and multiplier blocks in parallel, offering two outputs at the same frequency with adjustable relative phase.

The second multiplied (and phased) frequency is split into two paths; one is followed by a frequency doubler.

All the outputs are filtered by a band pass filter; specific frequency plan can be designed by selecting appropriate filters.

With an input frequency in the 10,7GHz window, the **PSMX** delivers two 21,5GHz signals and one 43GHz signal. All the output signals are phase shifted with regards to the input, the second 21,5GHz and the 43GHz signal being phase shifted with regards to the first 21,5GHz output signal.

The phase shifters are digitally controlled with a 6 bits command.

Ordering information:

VWA 00045 AD	Clock Generator with phase control for 21,5GHz	VWA 00047 AA	Clock Speed Doubler 21,5 GHz to 43 GHz with Filter
VWA 00054 AD	Clock Generator with phase control for 21,5GHz and 43GHz	VWA 00053 AA	Clock Speed Doubler 10,7GHz to 21,5 GHz with Filter

Features

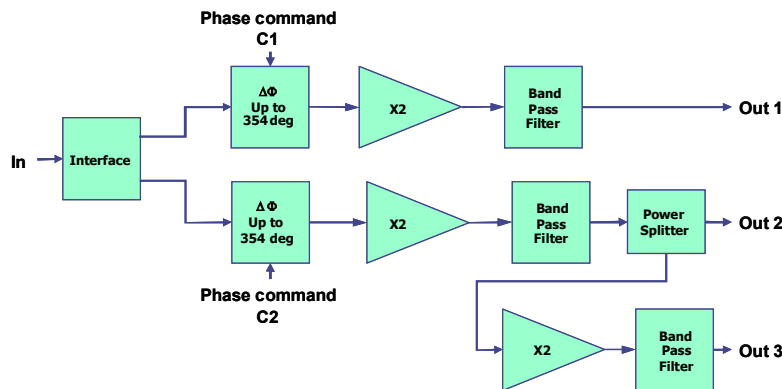
- Input frequency 10,7GHz
- Output frequencies 21,5GHz (2 outputs) and 43GHz
- Two independent phase shifters
- 6 bits phase shift command
- 5.6° phase shift step
- 50Ω RF Single ended input and output
- AC coupled
- K connector
- +5V & -5V supply voltage

Applications

- SONET/SDH
- DPSK, DQPSK
- Clock Generation and Phase Matching
- 22Gb/s and 43Gb/s
- E2O driver
- Fiber transmission
- Broadband communication
- Test and measurement

Single clock doublers from 10.7 GHz to 21.5 GHz and from 21.5 GHz to 43 GHz also available

Functional Block Diagram



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<http://www.vectrawave.com>

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VWA 00045 ADxx DS Rev 0.21

VectraWave Proprietary information subject to change



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Typical Characteristics

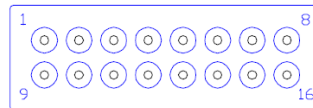
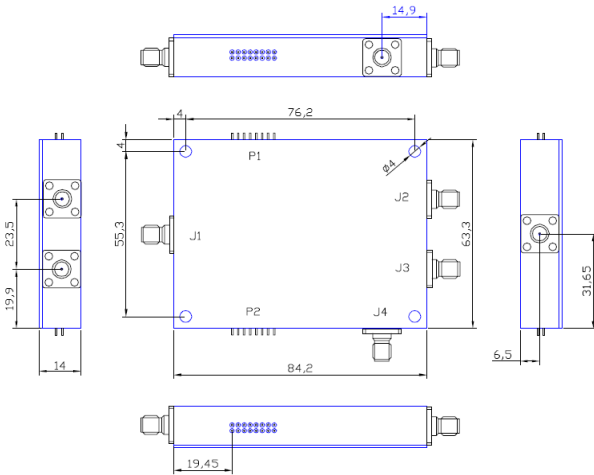
Parameter	Symbol	Conditions	Min	Typ	Max	Unit	Comment
Positive supply voltage	VDD			5		V	
Negative supply voltage	VEE			-5		V	
Positive supply current	IDD			300		mA	
Negative supply current	IEE			20		mA	
Input level J1	Pin			10		dBm	
Output level J2	Pout 1			10		dBm	
Output level J3	Pout 2			7		dBm	
Output level J4	Pout 3			12		dBm	
Output Impedance matching	S22	J2, J3, J4		15		dB	
Input Impedance matching	S11	J1		8		dB	

Mechanical dimensions and pin out

VWA 00054 AD

Connecteurs vidéo P1 & P2 :
Affectation des perles

Table de Vérité :



- | | |
|----------|-----------|
| 1 : NC | 9 : NC |
| 2 : NC | 10 : NC |
| 3 : NC | 11 : NC |
| 4 : GND | 12 : GND |
| 5 : BIT5 | 13 : BIT6 |
| 6 : -5V | 14 : BIT4 |
| 7 : BIT2 | 15 : BIT3 |
| 8 : +5V | 16 : BIT1 |

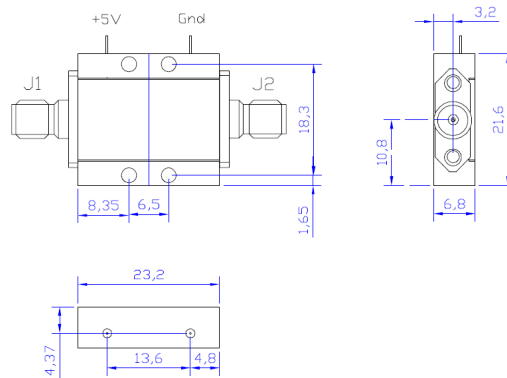
Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Phase
0	0	0	0	0	0	Ref.
+5V	0	0	0	0	0	5.625
0	+5V	0	0	0	0	11.25
0	0	+5V	0	0	0	22.5
0	0	0	+5V	0	0	45.0
0	0	0	0	+5V	0	90.0
0	0	0	0	0	+5V	180.0
+5V	+5V	+5V	+5V	+5V	+5V	360.0

Accès HF :

- | | |
|-----------------------|-------------------|
| J1 : Entrée 10,75 GHz | Niveau : + 10 dBm |
| J2 : Sortie 21,5 GHz | Niveau : + 10 dBm |
| J3 : Sortie 21,5 GHz | Niveau : + 7 dBm |
| J4 : Sortie 43 GHz | Niveau : + 12 dBm |

NB : Vue extérieure du boîtier.
Les 2 connecteurs ont un brochage identique.

VWA 00047 AA & VWA 00053 AA



Handling

These products are sensitive to electrostatic static free workstation. Take precautions to surfaces and recognized anti-static techniques



discharge and should not be handled except at a prevent ESD; use wrist straps, grounded work when handling the **PSMX**.

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