

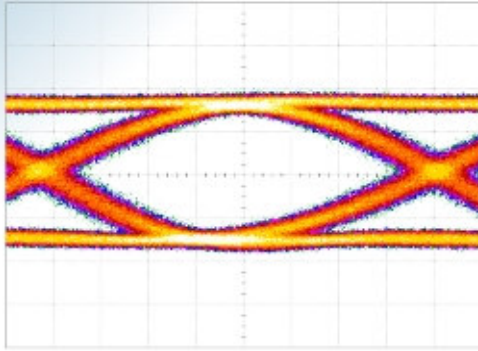


SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23D • 12277 Berlin • Germany

Phone ++49 30 / 772 05 10 • Fax ++49 30 / 753 10 78

E-Mail: sales@shf.de • Web: <http://www.shf.de>



Datasheet

SHF 1020 C

Frequency Doubler





Description

The SHF 1020 C is a frequency doubler which converts an input clock signal in the range 9...12,5 GHz into a 18...25 GHz signal. A built-in filter ensures strong suppression of the fundamental frequency.

Specifications – SHF 1020 C

Parameter	Unit	Min.	Typ.	Max.	Comment
Input frequency	GHz	9		12,5	sinusoidal signal
Output frequency	GHz	18		25	
Input power	dBm	-10	0	4	sinusoidal signal
Output power	dBm		0		@ $P_{in} = 0\text{dBm}$; see Note1
Suppression of fundamental	dBc	30			
Input return loss	dB			8	9...12,5 GHz
Power supply	V mA	6	300	9 310	
Power consumption	W		1,8	2,8	
Input / output connector					2.92mm female / 2.92mm female
Dimensions	mm				50x35x22

Note1: Output power depends on the input power

Signal Output Amplitude

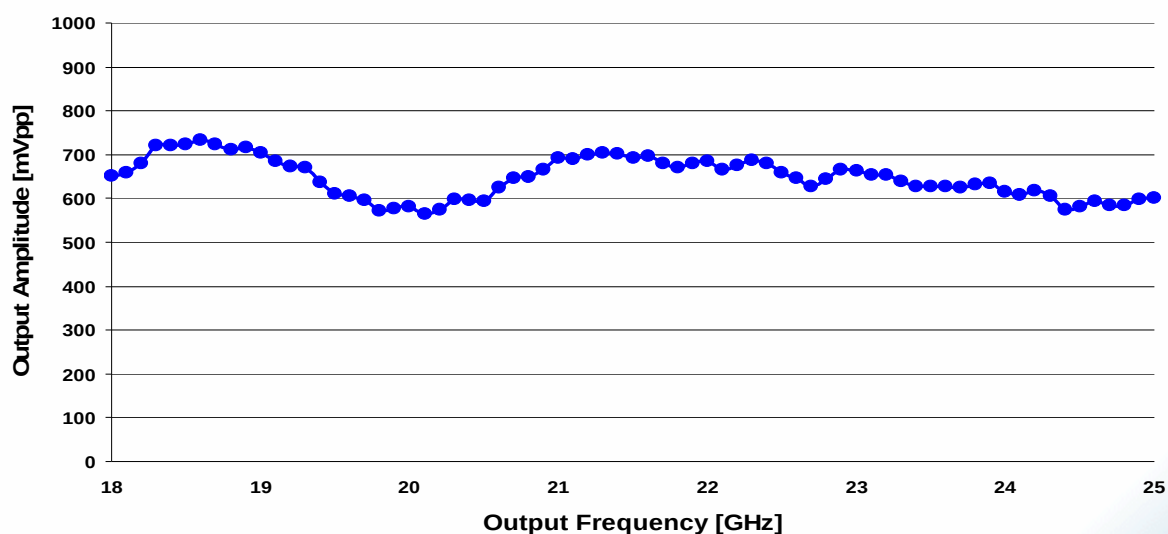
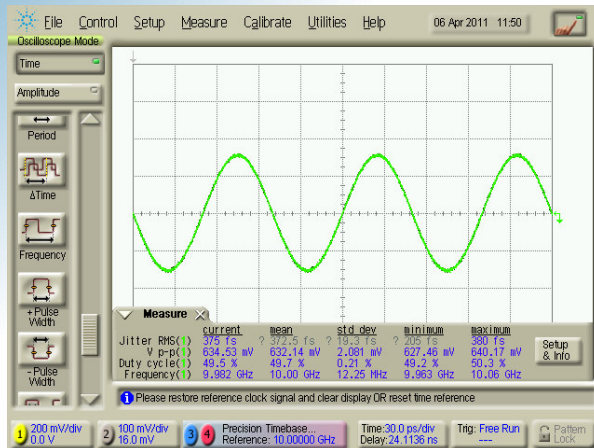


Fig.1: Output amplitude @ $P_{in} = 0\text{ dBm}$

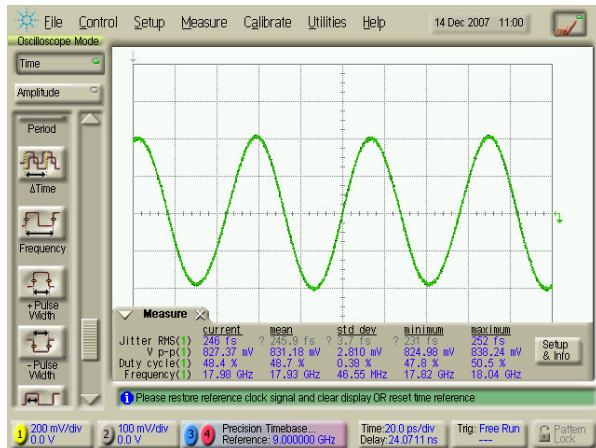


Output waveforms

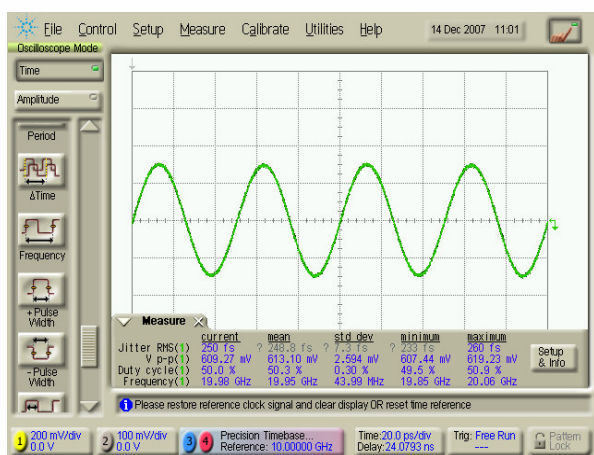
Typical output waveforms measured using Agilent DCA 86100A, sampling module 86118A [70 GHz], precision timebase module 86107A, 0.5 m microwave cable assembly, 10 dB attenuator



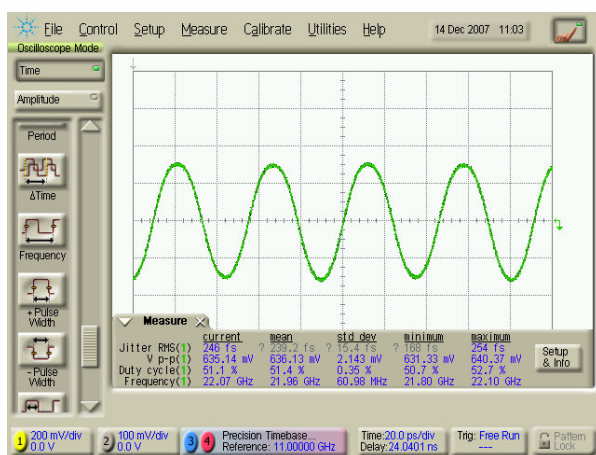
input signal @ $f_{in} = 10$ GHz



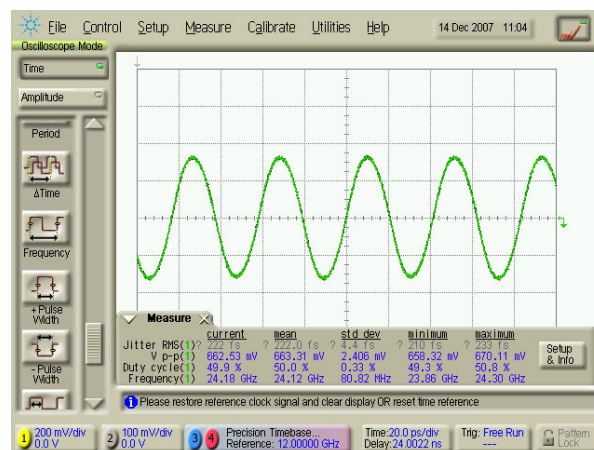
18 GHz output signal @ $f_{in} = 9$ GHz



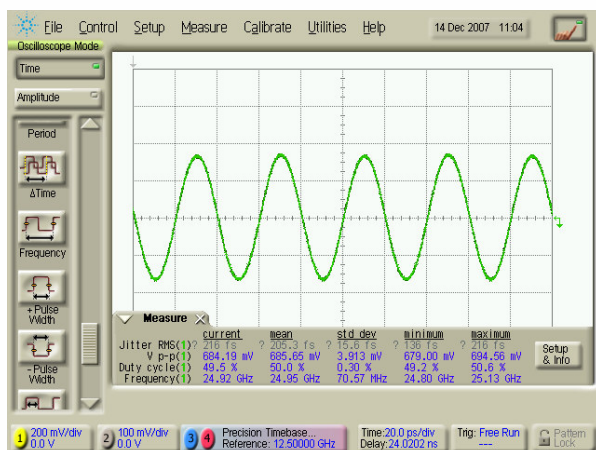
20 GHz output signal @ $f_{in} = 10$ GHz



22 GHz output signal @ $f_{in} = 11$ GHz



24 GHz output signal @ $f_{in} = 12$ GHz



25 GHz output signal @ $f_{in} = 12,5$ GHz



Suppression of Fundamental & Harmonic

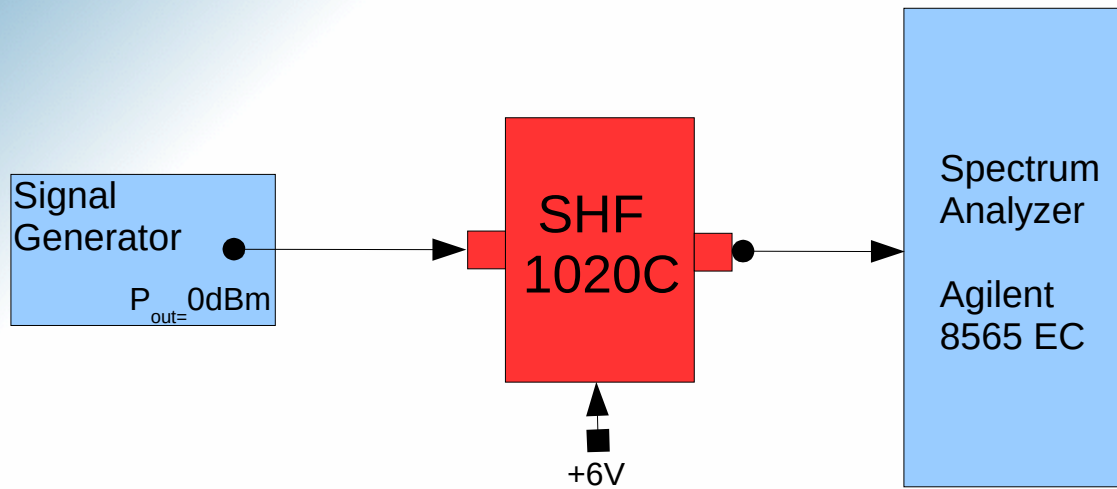


Fig.2: Test setup of measurement

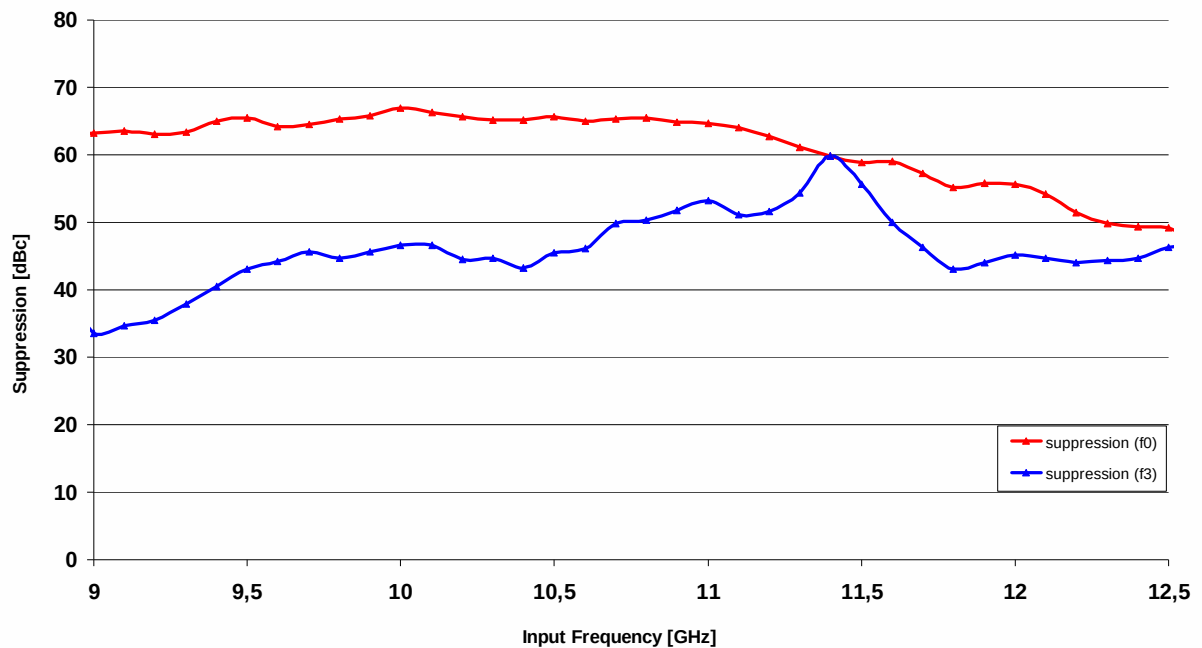


Fig.3: Suppression of fundamental (f_0) & harmonic (f_3) frequencies



Module Outline

