

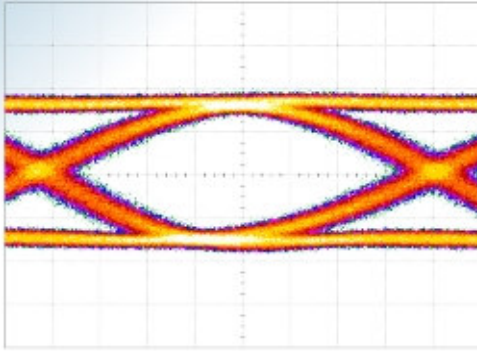


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Datasheet

SHF 1428 A

Frequency Doubler





Description

The SHF 1428 A is a frequency doubler which converts an input clock signal in the range 12...16,5 GHz into a 24...33 GHz signal. A built-in filter ensures strong suppression of the fundamental frequency.

Specifications – SHF 1428 A

Parameter	Unit	Min.	Typ.	Max.	Comment
Input frequency	GHz	12		16,5	sinusoidal signal
Output frequency	GHz	24		33	
Input power	dBm	-2	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	12...16,5 GHz
Power supply	V mA	5	70	9	90
Power consumption	W		0,35	0,45	
Input / output connector					2.92mm female / 2.92mm female
Dimensions	mm				50x35x22

Note1: Output power depends on the input power

Signal Output Amplitude

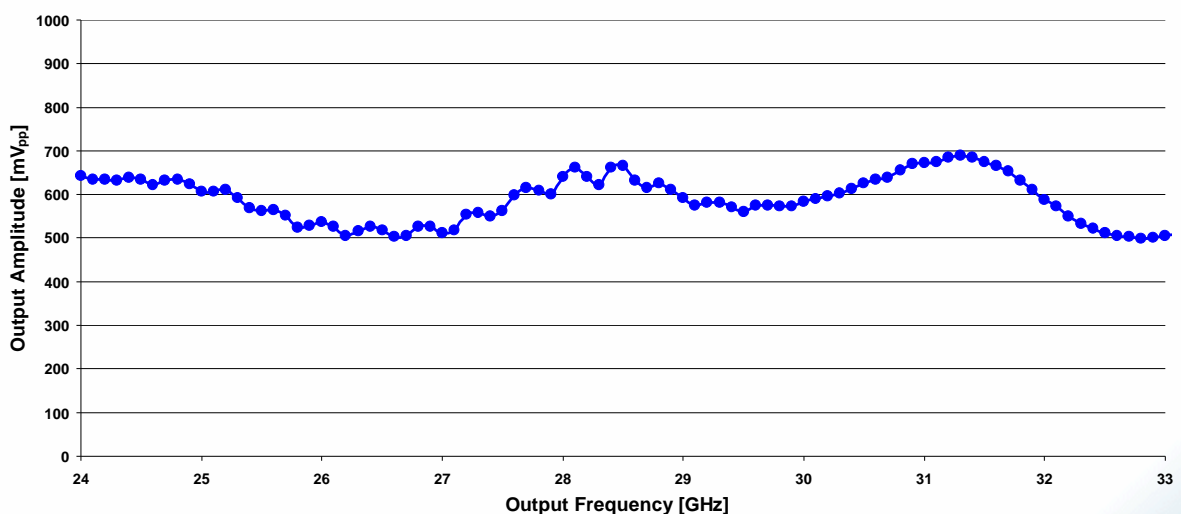
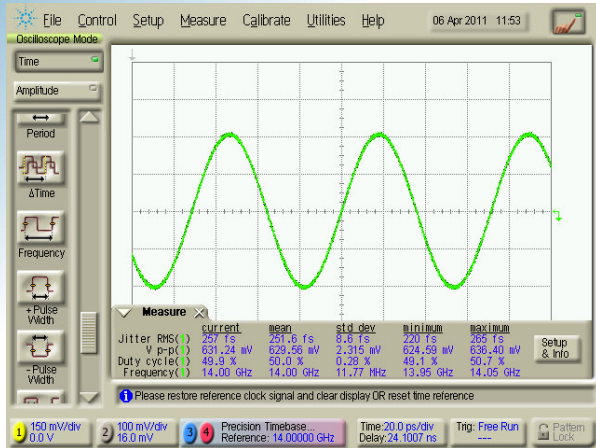


Fig.1: Output amplitude @ $P_{in} = 0\text{ dBm}$

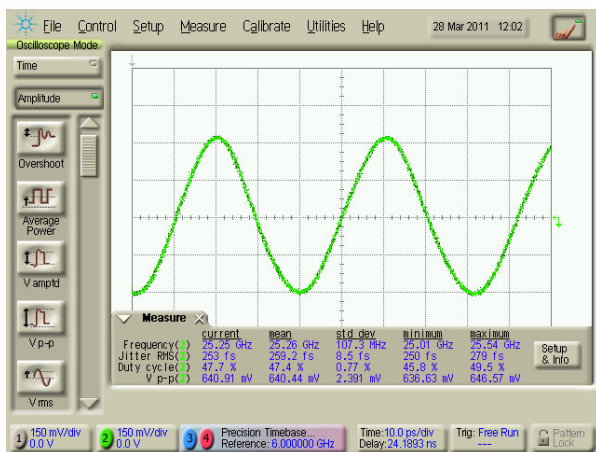


Output waveforms

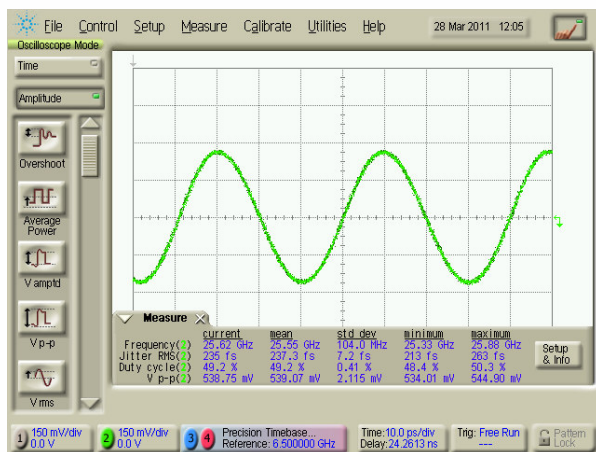
Typical output waveforms measured using Agilent DCA 86100A, sampling module 86118A [70 GHz], precision timebase module 86107A, 0.5 m microwave cable assembly, 10 dB attenuator



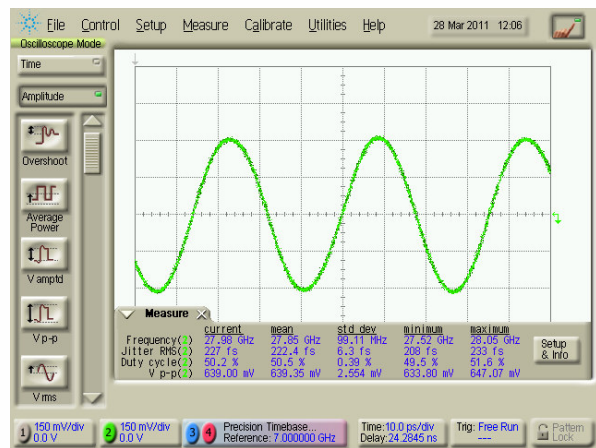
input signal @ $f_{in} = 14$ GHz



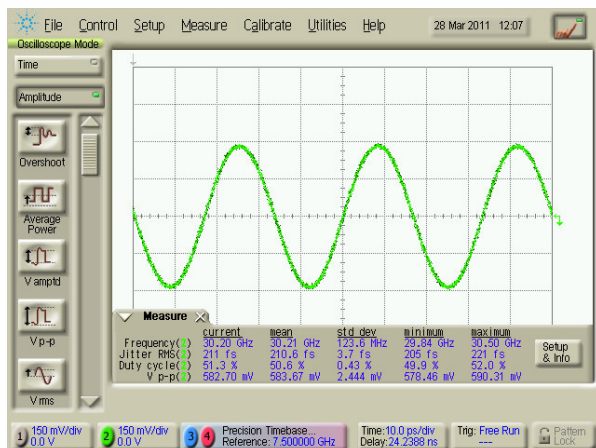
24 GHz output signal @ $f_{in} = 12$ GHz



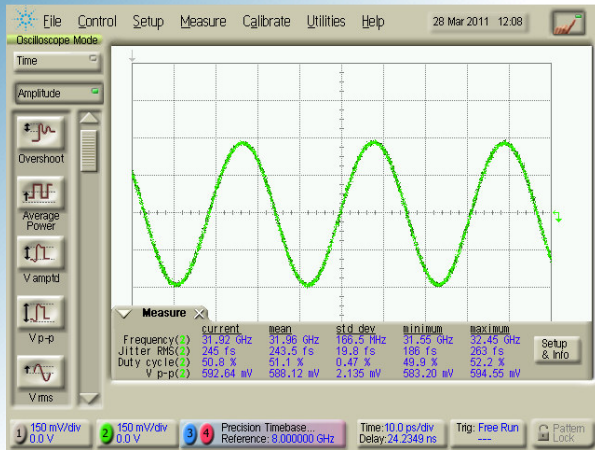
26 GHz output signal @ $f_{in} = 13$ GHz



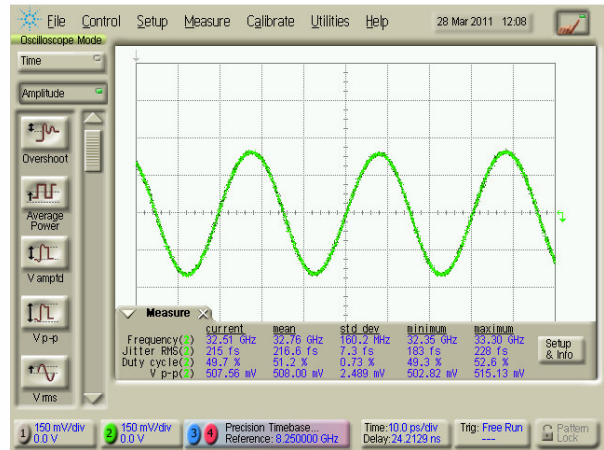
28 GHz output signal @ $f_{in} = 14$ GHz



30 GHz output signal @ $f_{in} = 15$ GHz



32 GHz output signal @ $f_{in} = 16$ GHz



33 GHz output signal @ $f_{in} = 16,5$ GHz



Suppression of Fundamental & Harmonic

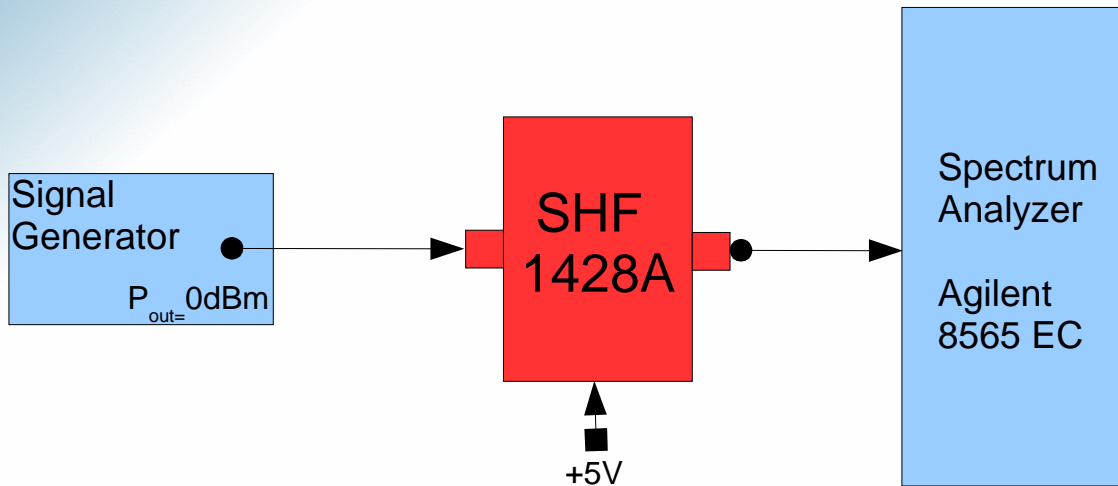


Fig.2: Test setup of measurement

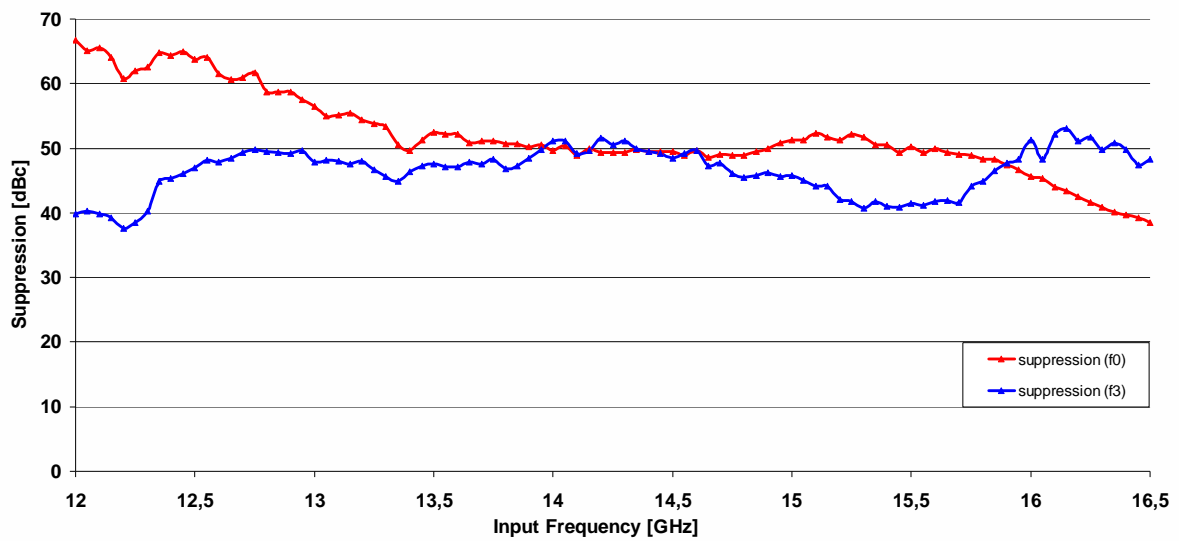
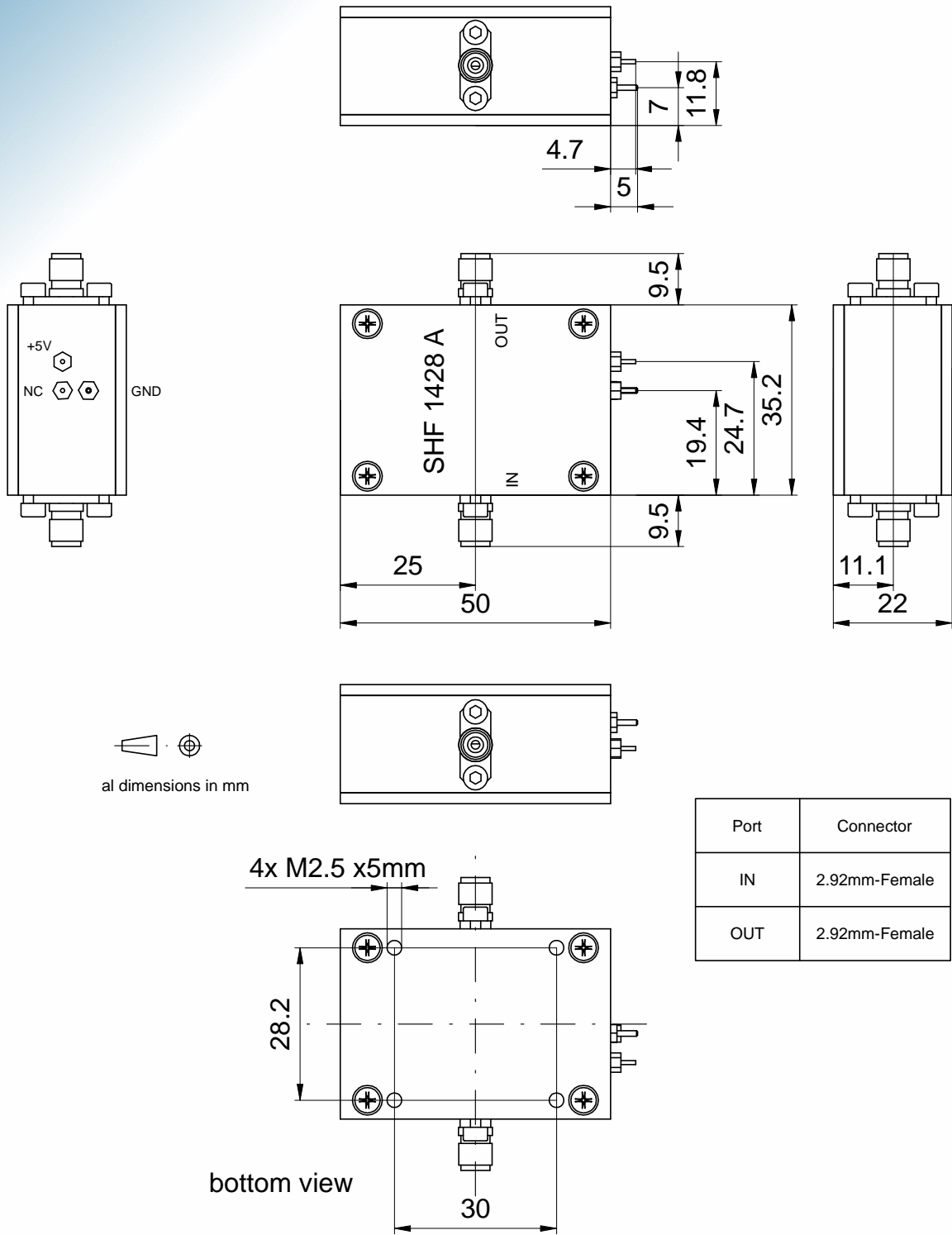


Fig.3: Suppression of fundamental (f_0) & harmonic (f_3) frequencies



Module Outline



All dimensions in mm