

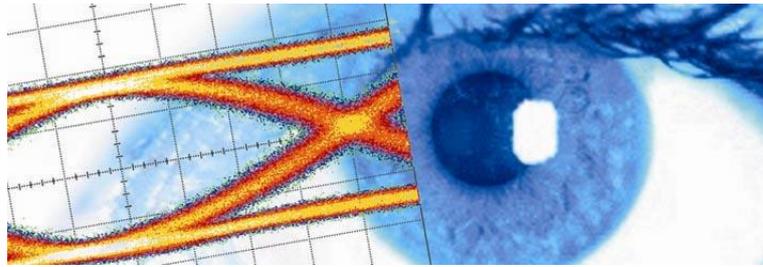


SHF Communication Technologies AG

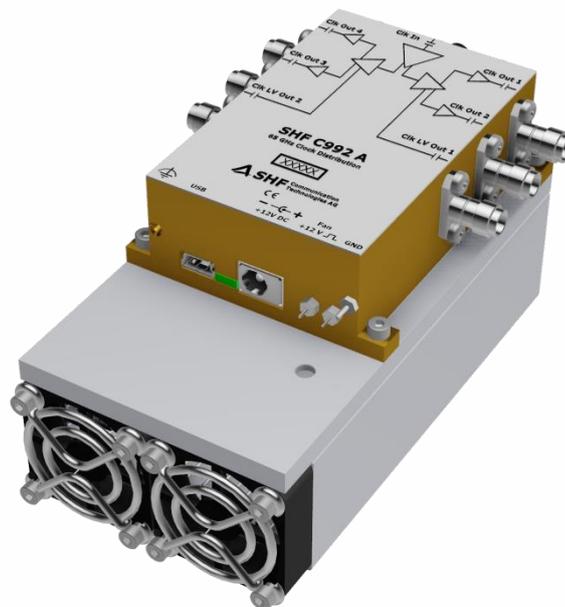
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Datasheet SHF C992 A 65 GHz Clock Distribution



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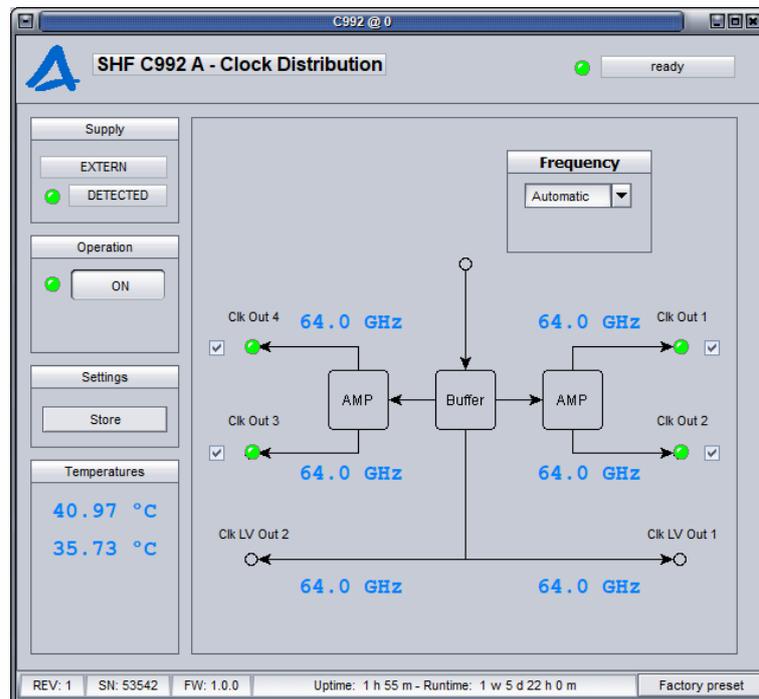


Description

The SHF C992 A is a versatile broad band clock distribution providing six copies of the incoming clock. A single clock signal can be used to synchronize various further modules at the same frequency.

Features

- Broadband operation from 2 to 65 GHz
- Multiple clock outputs at the input frequency
- Controlled by intuitive graphical user interface via USB (either with the SHF BER Control Center (BCC) or the SHF Control Center (SCC))



BCC Control Center – SHF C992 A

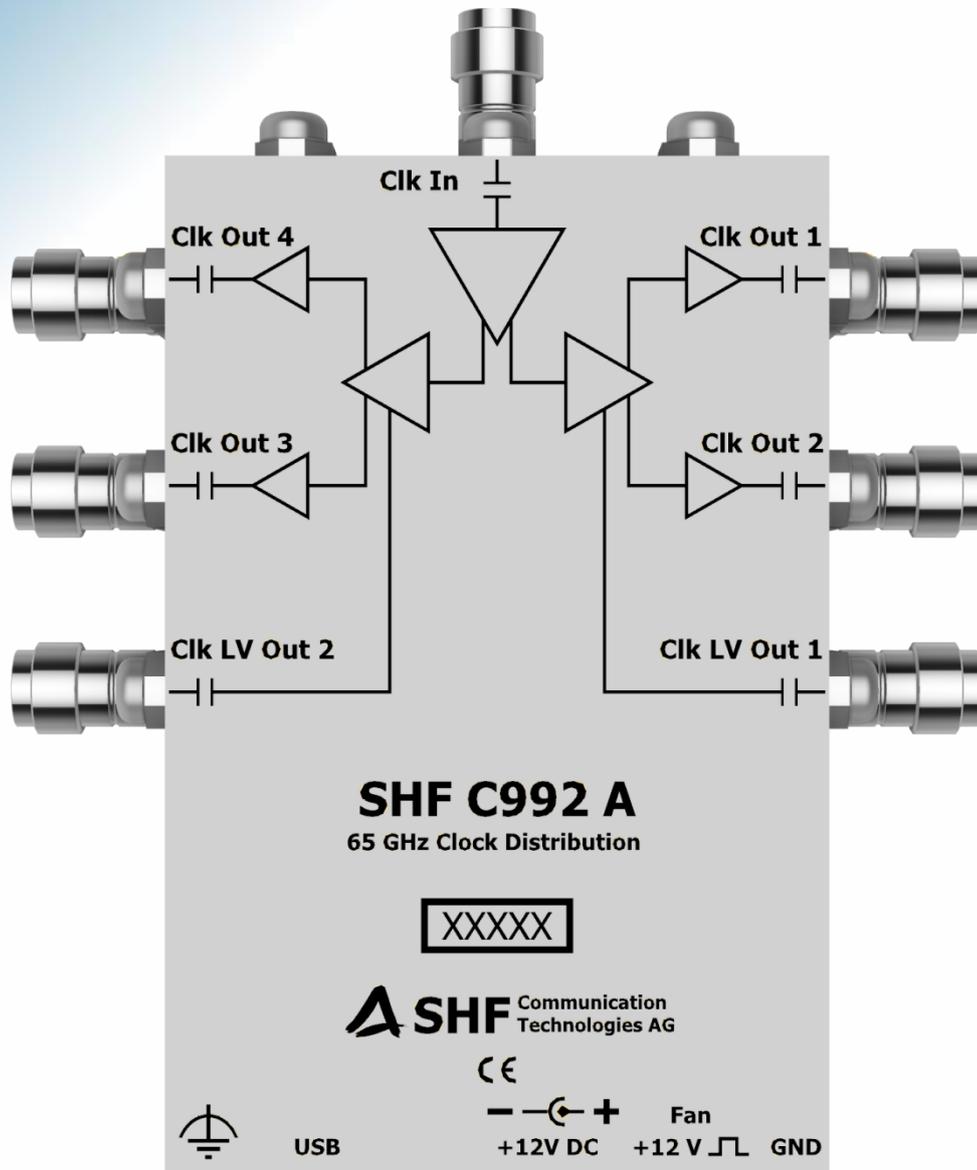
Applications

Test setups are always an interaction of different parts; sophisticated setups may include many different instruments and modules. To operate concurrently a common clock signal is often indispensable.

For example, in a typical application the clock input is fed with a signal from a signal generator like the SHF 78124 A while the clock outputs can be used to drive remote heads like SHF's DACs, Multiplexers, Demultiplexers or PAM-Multiplexers.



Block Diagram





Accessories

- +12 V Power Supply Desktop Adapter
- Functional Earth Cable
- Mini-USB cable

Absolute Maximum Ratings

Parameter	Unit	Symbol	Min.	Typ.	Max.	Comment
Input Parameters						
Input Amplitude	mV	$V_{\text{Clk in}}$			1000	Peak-to-Peak
External DC Voltage on RF Input Port	V	$V_{\text{DC in}}$	-6		+6	AC coupled port
External DC Voltage on RF Output Ports	V	$V_{\text{DC out}}$	-6		+6	AC coupled ports
DC Supply Voltage	V	V_{cc}	0		+14	



Specifications – SHF C992 A

Parameter	Unit	Symbol	Min.	Typ.	Max.	Comment
Input Frequency						
Minimum Input Frequency	GHz	$f_{in\ min}$			2	
Maximum Input Frequency	GHz	$f_{in\ max}$	65			
Input Amplitude						
Input Amplitude	mV _{pp}	V_{in}	200	600	900	AC coupled Single ended
Output Frequency						
Clock Out	GHz	f_{out}	2		65	f_{in}
Clock LV Out	GHz	f_{out}	2		65	f_{in}
Output Amplitude						
Clock Out	mV _{pp}	V_{out}	600		900	AC coupled Single ended Independent of the Input Amplitude
Clock LV Out	mV _{pp}	V_{out}	200		700	AC coupled Single ended Independent of the Input Amplitude



Specifications – SHF C992 A

Parameter	Unit	Symbol	Min.	Typ.	Max.	Comment
Power Requirement						
Supply Voltage	V	V_{CC}	+11.5	+12.0	+12.5	
Supply Current	A	I_{CC}		1.24 1.50		Without heat sink With heat sink
Power Dissipation	W	P_d		14.9 18.0		Without heat sink With heat sink @ $V_{CC} = +12\text{ V}$
Integrated Fan Control¹						
Output Voltage Fan	V	$V_{Fan+12V}$		+12		
Output Current Fan	A	$I_{Fan+12V}$		0.26		
Output Frequency Fan	Hz	$f_{Fan+12V}$		30		
Input Tacho Fan	V	$V_{Fan\ Tacho}$		3.3		
Mechanical Characteristics						
Clock In	Ω			50		1.85 mm (V) female
Clock Out	Ω			50		1.85 mm (V) female
Clock LV Out	Ω			50		1.85 mm (V) female
Dimensions	mm					See Outline Drawing pages 10 / 11
Weight	g			200 490		Without heat sink With heat sink
Conditions						
Operating Temperature	$^{\circ}\text{C}$	$T_{ambient}$	15		35	

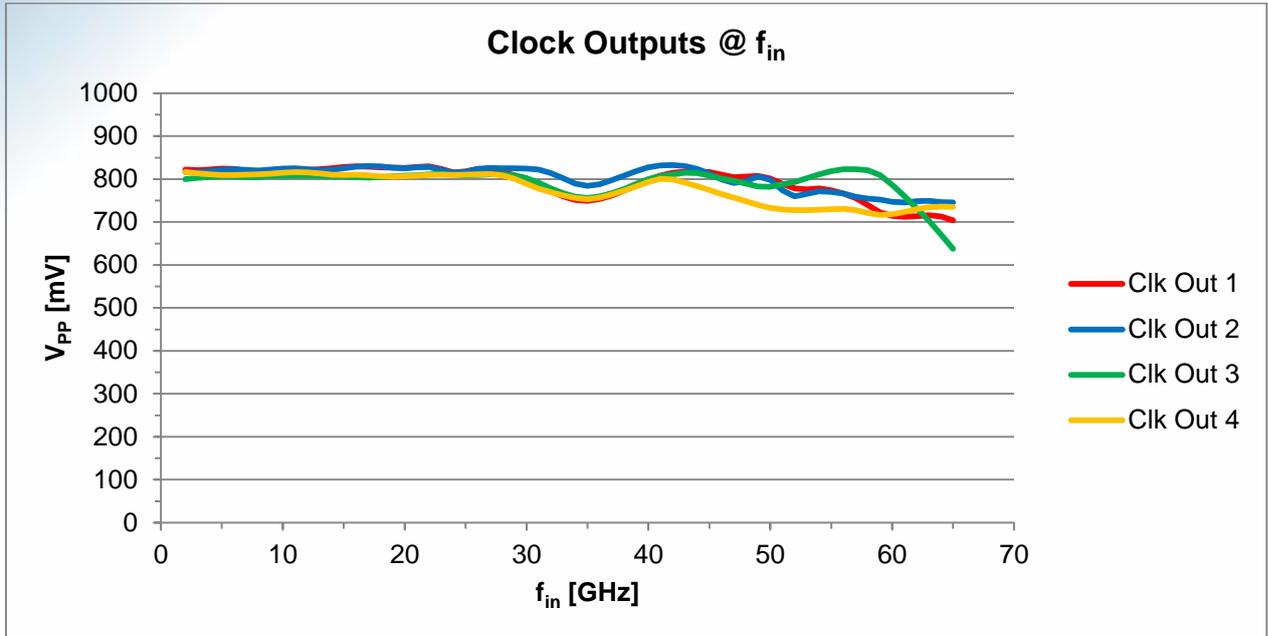
¹ Use only with the supplied heat sink and fan!



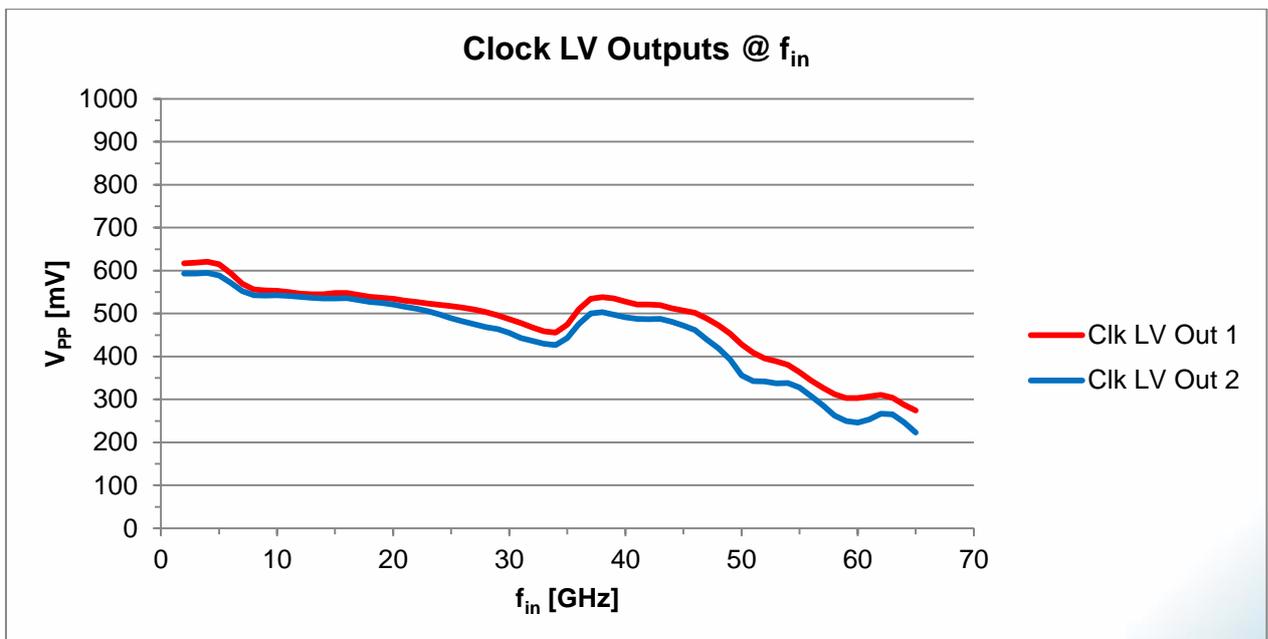
Typical Output Amplitudes @ $2.0 \text{ GHz} \leq \text{Clk In} \leq 65.0 \text{ GHz}$

The measurements below have been performed using an Anritsu[®] signal generator (68197C) and a Tektronix[®] Digital Serial Analyzer (DSA8300) with a Phase Reference Module (82A04B-60G) and a 70 GHz Sampling Module (80E11). The outputs of the Clock distribution module had been connected directly to the DSA input. Input power of the clock signal is 0 dBm (630 mV_{pp}).

Clock Outputs



Clock LV Outputs



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Typical Output Waveforms @ 2.0 GHz ≤ Clk In ≤ 65.0 GHz

The measurements below have been performed using an Anritsu® signal generator (68197C) and a Tektronix® Digital Serial Analyzer (DSA8300) with a Phase Reference Module (82A04B-60G) and a 70 GHz Sampling Module (80E11). The outputs of the Clock distribution module had been connected directly to the DSA input. Input power of the clock signal is 0 dBm (630 mV_{pp}).

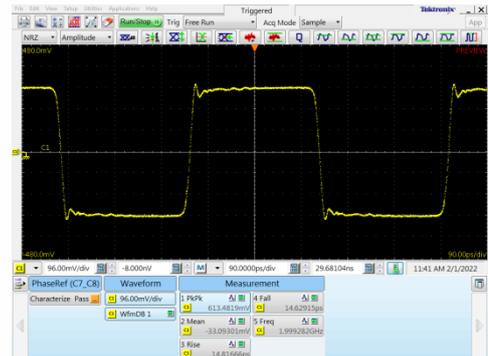
Clock Outputs @ 4.0 GHz, 28.0 GHz & 32.0 GHz Clock Input

Clock Outputs

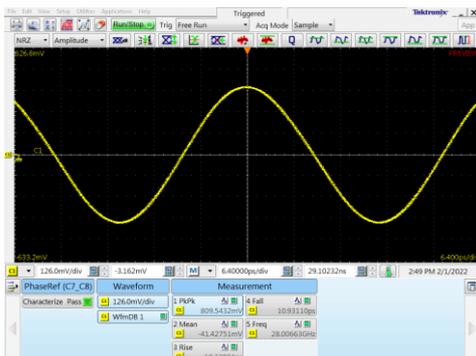


4.0 GHz output signal @ Clk Out

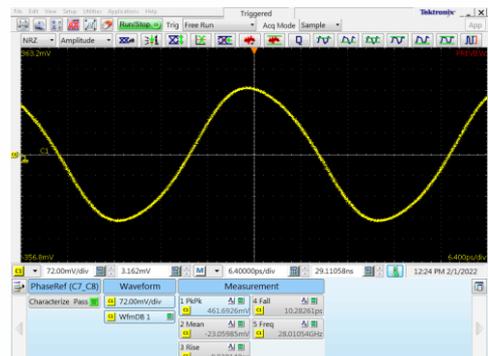
Clock LV Outputs



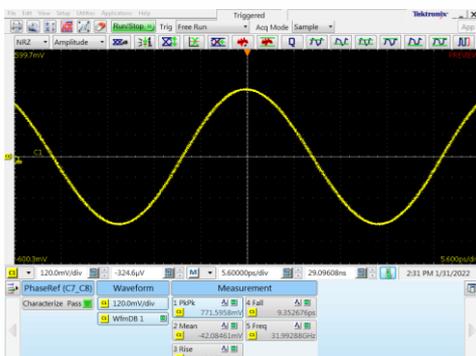
4.0 GHz output signal @ Clk LV Out



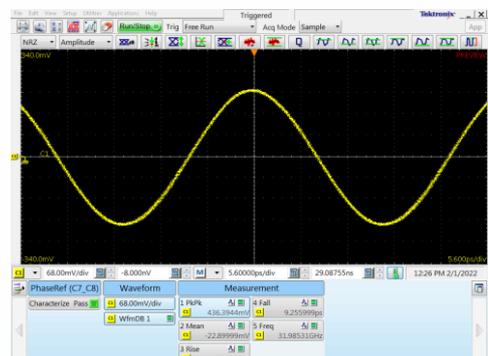
28.0 GHz output signal @ Clk Out



28.0 GHz output signal @ Clk LV Out



32.0 GHz output signal @ Clk Out



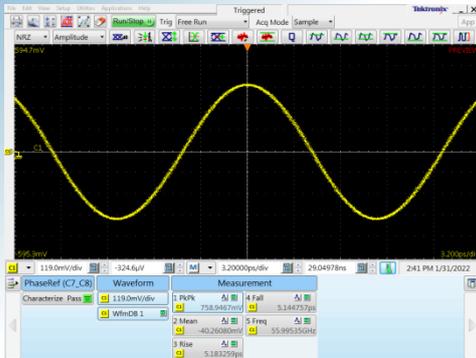
32.0 GHz output signal @ Clk LV Out

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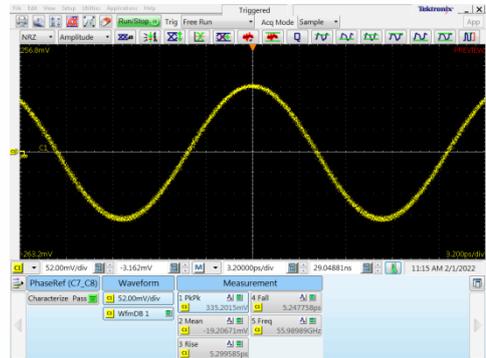
Clock Outputs @ 56.0 GHz, 60.0 GHz & 64.0 GHz Clock Input

Clock Outputs

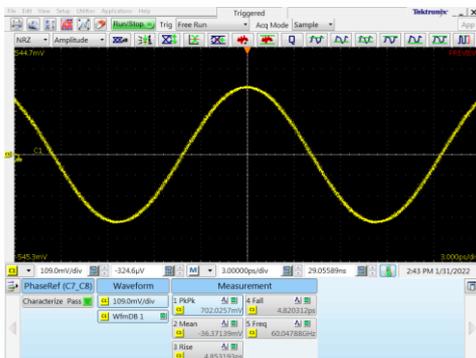


56.0 GHz output signal @ Clk Out

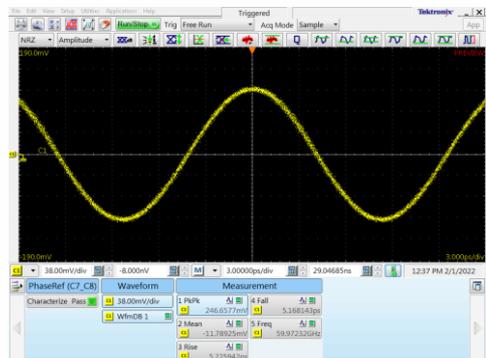
Clock LV Outputs



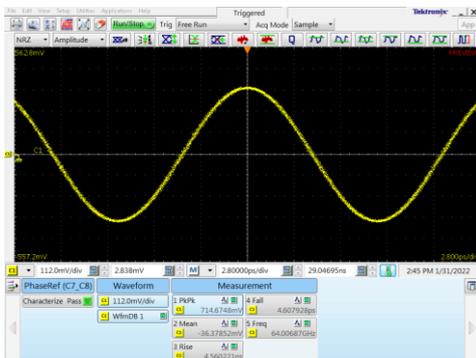
56.0 GHz output signal @ Clk LV Out



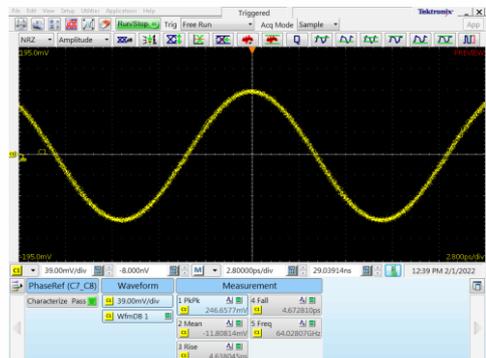
60.0 GHz output signal @ Clk Out



60.0 GHz output signal @ Clk LV Out



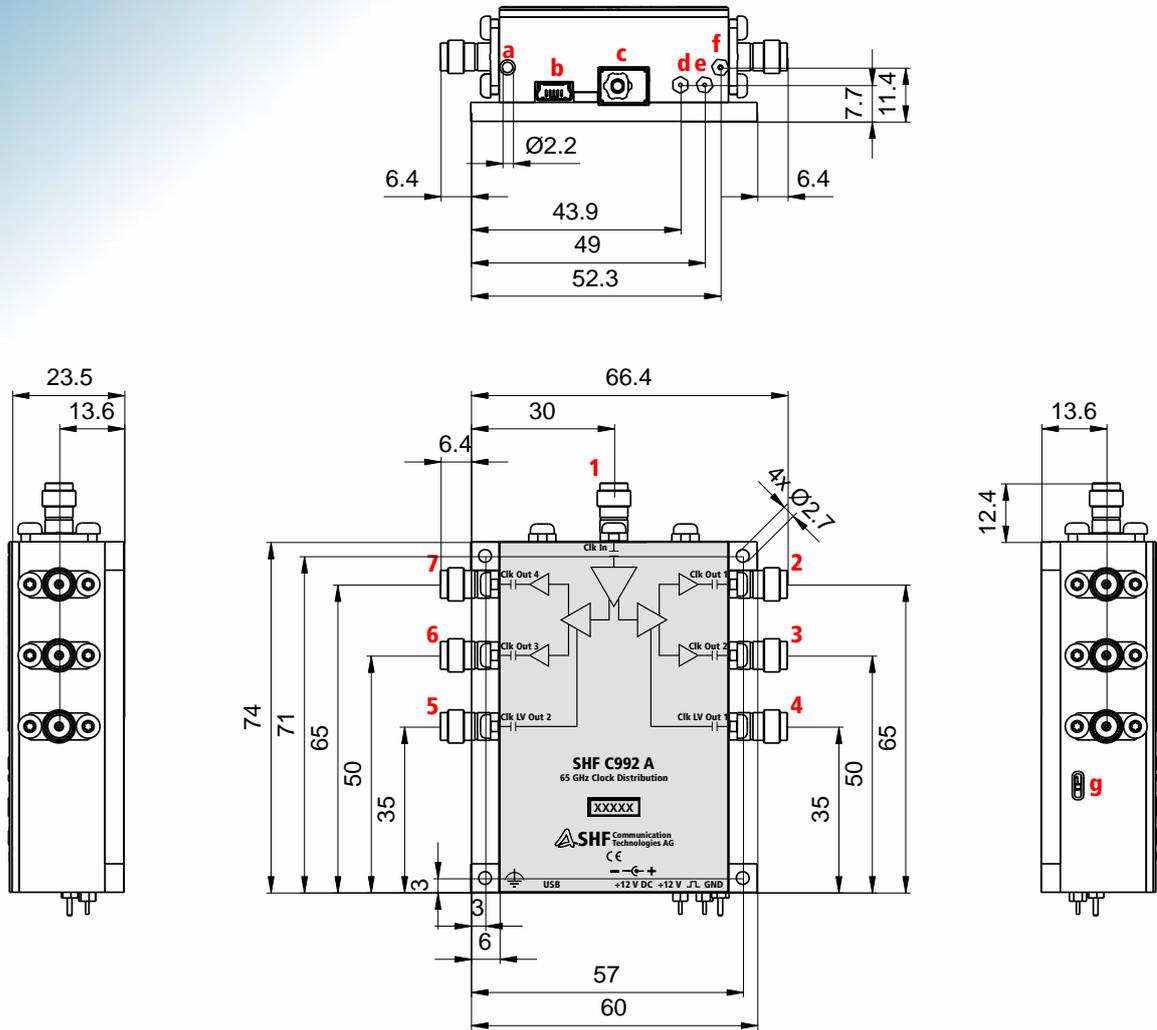
64.0 GHz output signal @ Clk Out



64.0 GHz output signal @ Clk LV Out



Mechanical Drawing – Module only



Pos	Port	Connector
1	Clock In	1.85mm (V) female
2	Clock Out 1	1.85mm (V) female
3	Clock Out 2	1.85mm (V) female
4	Clock LV Out 1	1.85mm (V) female
5	Clock LV Out 2	1.85mm (V) female
6	Clock Out 3	1.85mm (V) female
7	Clock Out 4	1.85mm (V) female

Port	Connector
a	Functional earth (FE)
b	Mini-USB
c	Power
d	Fan+12V
e	Fan Tacho
f	GND
g	Service

all dimensions in mm

