

## MAIN FEATURES

- ❖ Very wide frequency tuning range
- ❖ 1Hz step size
- ❖ Low phase noise
- ❖ Built in high stability frequency reference
- ❖ PC programmable
- ❖ Small size



## DESCRIPTION

The BSVK19 is a high performance frequency synthesizer intended for use in professional applications, where the extra wide frequency tuning range and fine frequency step, compact size and wide operating temperature range are important factors. This unit can be used among others in telecommunications, satellite communications, military applications and laboratory testing. The BSVK19 contains a low phase noise reference which can be synchronized to external 10MHz signal for better frequency accuracy. The synthesizer has clean output signal with excellent phase noise and low narrowband spurious typically less than -60dBc up to 21GHz and even better at lower frequencies. The BSVK19 has low output level variation over temperature and frequency. It has a 31dB output attenuator to set the desired signal level, and the output can also be muted with an external command. The control and monitoring uses RS232 and SPI protocols. USB control is also available upon request.

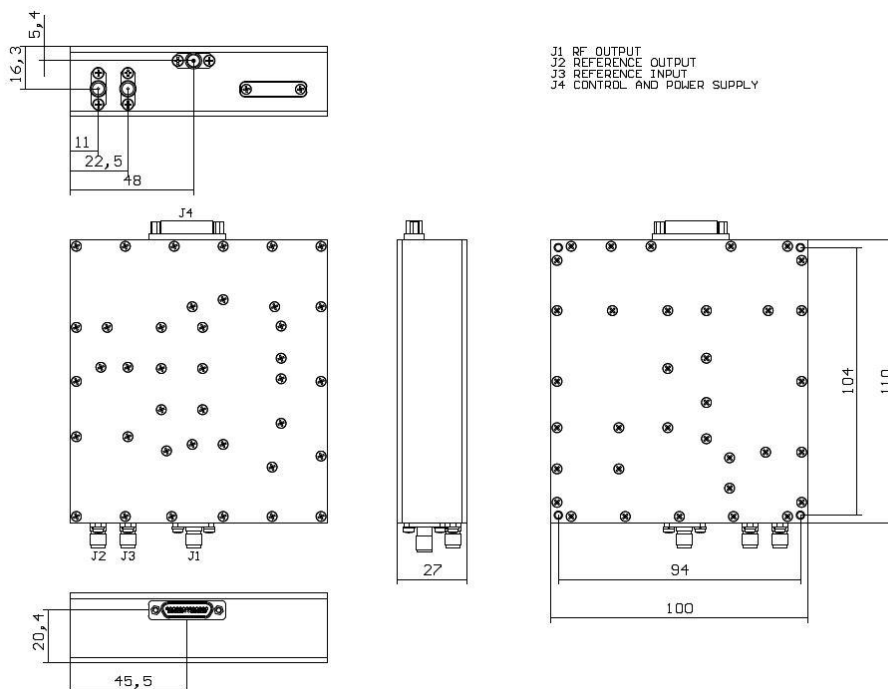
## SPECIFICATIONS

Frequency range	100-21000MHz					
Frequency step	1Hz					
Output impedance	50ohm nom.					
Output RF power	typ. +12dBm, min. +10dBm guaranteed over temperature and frequency					
RF power variation	typ. ±1dB, max. ±2dB over temperature and frequency					
RF mute	yes, >80dB isolation					
Spurious	typ. -65dBc, max. -50dBc (carrier ±10MHz)					
Subharmonics	typ. -60dBc, max. -50dBc					
Harmonics	typ. -30dBc, max. -15dBc 100MHz to 1000MHz max. -20dBc above 1000MHz					
Phase noise (max./typ; dBc/Hz)	Output frequency					
		100MHz	500MHz	5GHz	20GHz	
	@offset	100Hz	-109/-115	-99/-105	-78/-84	-65/-71
		1kHz	-119/-125	-114/-120	-95/-101	-82/-88
		10kHz	-124/-130	-124/-130	-104/-110	-93/-99
		100kHz	-134/-140	-126/-132	-107/-113	-95/-101
1MHz		-142/-148	-140/-146	-122/-128	-108/-114	

Frequency switching time	typical 130usec, max. 250usec after frequency command
Output level control	Range: 0-31dB Step: 1dB Accuracy: $\pm 0.75\text{dB}@+25^{\circ}\text{C}$ $\pm 1.25\text{dB}@$ full temperature range
Reference input	10MHz, -6...+6dBm (automatic detection)
Reference output	10MHz, 0dBm@50ohm load
Frequency accuracy (external reference)	frequency error <1Hz with respect to external reference (zero frequency error is possible upon request, consult factory)
Frequency stability (internal reference)	better than $\pm 0.5\text{ppm}$ over temperature aging: better than $\pm 1.5\text{ppm}$ in first year and $\pm 5\text{ppm}$ for 10 years
Control	RS232 and SPI (TTL level) for USB control consult factory
Alarm	TTL level, "High" in LOCK, "Low" in UNLOCK
Power supply	+11 to +15VDC, +12V nominal; 620mA max.@+12V
RF and reference connectors	SMA (F)
Control & DC connector	25 pole micro-D socket
Operating Temperature range	-40°C to +85°C (base-plate temperature)
Storage Temperature range	-55°C to +95°C
Size	110x100x27mm

Specifications are subject to change without notice.

## OUTLINE DRAWING (mm)



## TYPICAL PERFORMANCE CHARACTERISTICS



Figure 1. Typical phase noise @ Fout=20GHz

## ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BSVK19K11048	BSVK19 0.1-21GHz microwave synthesizer; 1Hz step; 30dB level control; RS232&SPI control

## DOCUMENT REVISION

DOCUMENT NAME	REVISION	DATE
BSVK19-LM-K11048	V01	29/03/2023