SYN-E/X/X MM-WAVE PORTABLE SIGNAL GENERATOR

DATA SHEET

Frequency range
68 ÷ 88 GHz in few bands

ELVA-1 Millimeter Wave Division

SYN-E MMW GENERATOR KEY FEATURES:

Low Phase Noise

SYN-E Generator provides a high level of RF signal purity.
Examples for 70 GHz band:

- −50 dBc/Hz @ 10 kHz offset
- −98 dBc/Hz @ 100 kHz offset
- −100 dBc/Hz @ 1 MHz offset

1 kHz Resolution

The output frequency is controlled over the USB port with a resolution of 1 kHz.
Typical output frequency band is 1 ÷ 4 GHz within 68-88 GHz spectrum. For wide-band generator models contact ELVA-1.

High Power & Small Size

The output power options:

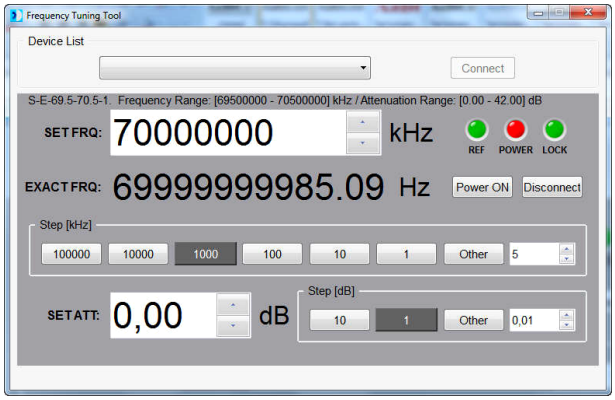
- 200 mW (+23 dBm) basic opt.
- 500 mW (+27 dBm), option #1
- 2000 mW (up to +33 dBm), option #2

Note. 2000 mW SYN-E model is housed in bigger case than on the photo.

General Descriprtion

The Portable Signal Generator SYN-E/X/X series is digitally controlled millimeter wave synthesizer providing output frequency in E-band or W-band spectrum.

High signal quality and adjustable power output with a 40 dB dynamic range and 1 kHz frequency resolution makes SYN-E/X/X Generator an ideal for use in test labs within scientific and industrial applications,



The USB port allows this generator to get connected to a host computer by a standard USB cable and controlled via the Graphical User Interface (GUI) software supplied with each unit. The simple communication protocol is available to custom automatic-test-equipment applications that provides carefree integration within various test environments while improving overall productivity and equipment utilization.

INSTRUMENT CONTROLS

Front side

Power switch with LED indicator

Lock detection LED

Reference clock input with LED indicator, BNC-F socket

Right side

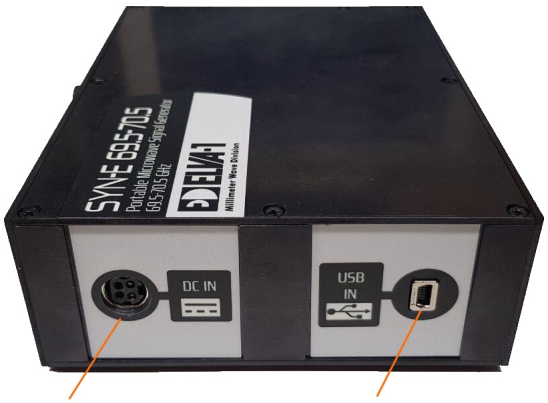
Two M4 threaded holes, with 70 mm between

RF Output, WR-12 with UG0387 U-M flange (for 70 GHz model)

Back side

Fan (with protective ribbon bumps around)

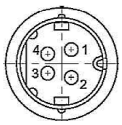
Left side



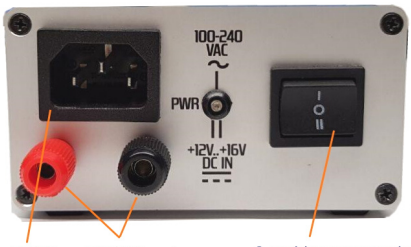
DC input KPJX-PM-4s socket

mini-USB input

Power Supply Front and Back sides



1: +5V, 2: GND,
3: +12V, 4: –5V



AC/DC and DC/DC inputs

3-position power switch

Power OUT, KPJX-PM-4S socket

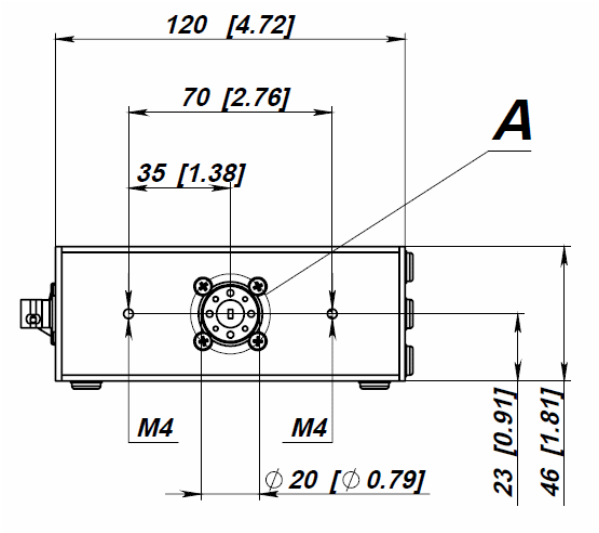
This ELVA-1 mmW generator, also called as synthesizer or millimeter wave source, is a cost-effective solution for applications requiring a stable and clean millimeter wave signal with up to 2000 mW potput power.

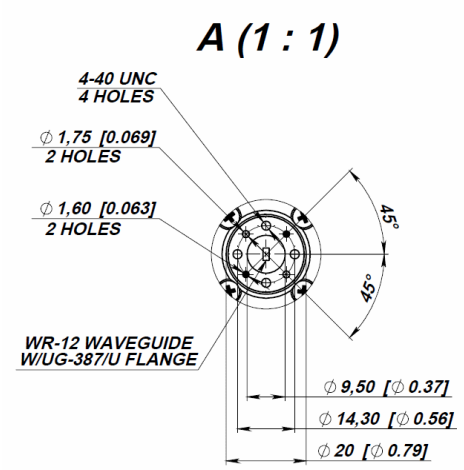
This ELVA-1 mmW generator can operate in either desktop or tower position. Power sensor is not included by default.

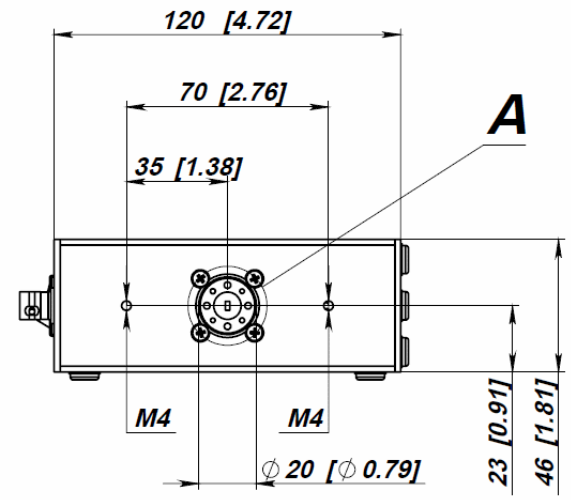
SYN-E/X/X MM-WAVE GENERATOR SPECIFICATIONS

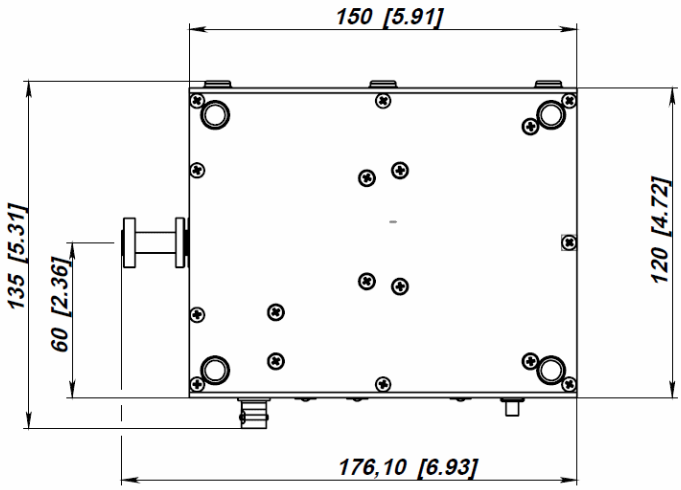
Parameter	Value
Frequency range	68 ÷ 88 GHz (in few bands)
Frequency resolution	1 kHz
Frequency accuracy	As for reference oscillator
Switching time	1 ms
External reference input	10 MHz, 1 Vp-p, 50 Ohm, BNC-F socket
Output power basic / option1 / option 2	200 mW / 500 mW / 2000 mW
Internal attenuator range	0 ÷ 30 dB
Attenuator resolution	0.02 dB
-Attenuation accuracy	0.01 dB
RF Power ON/OFF ratio	> 45 dB
RF Power ripple	0.5 dB max
Phase noise @70 GHz ouput	−50 dBc/Hz @ 10 kHz offset
	−98 dBc/Hz @ 100 kHz offset
	better −100dBc/Hz @ 1000 kHz offset
Harmonics level	−60 dBc in the range from 50 ÷ 140 GHz
Output waveguide (@70 GHz)	WR-10 / 12 with UG0387/U-M
LED Indicators	Power supply, Lock detection, REF detection
Remote control	USB-HID, software is included
USB port	mini-B type
Power Supply (suppiked)	external AC/DC, DC/DC 12÷16 VDC
Size and net weight	150x120x46 mm, 1 kg

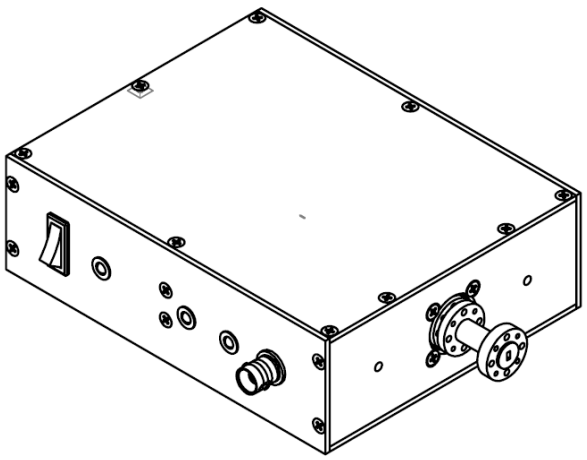
SYN-E/X/X MM-WAVE GENERATOR DRAWINGS











All dimensions on drawings are in millimeters and [inches].