

GPI B Controlled mm-Wave Frequency Synthesizer



- 4 GHz Bandwidth
- Smooth power/frequency dependence
- High Frequency Stability
- Low phase noise
- High output power
- Fully packaged
- Designed for GPIB (HP-IB) Systems
- Easy operation from front panel

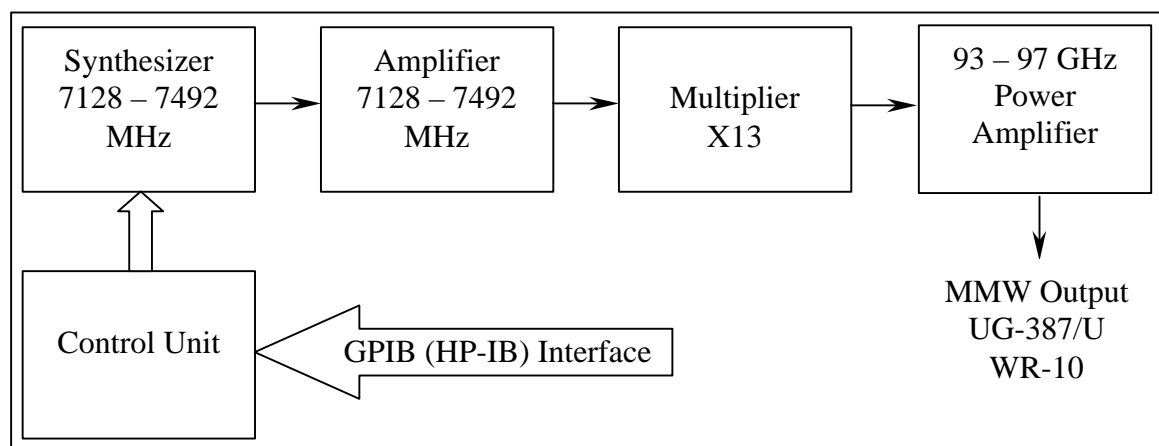
Applications

- High stability L.O. for receivers
- Laboratory measurement and test equipment
- Reference signal source
- GPIB (HP-IB) subsystem

Description

Elva-1 microwave synthesizer **PLS-1b (GPIB)** is intended to be used as a phase lockable signal source in the millimeter range of wavelengths. It is built on the base of cm-wave synthesizer using unique technology of IMPATT diode Active Frequency Multiplier (Elva-1 **IAFM** series) combining such features as:

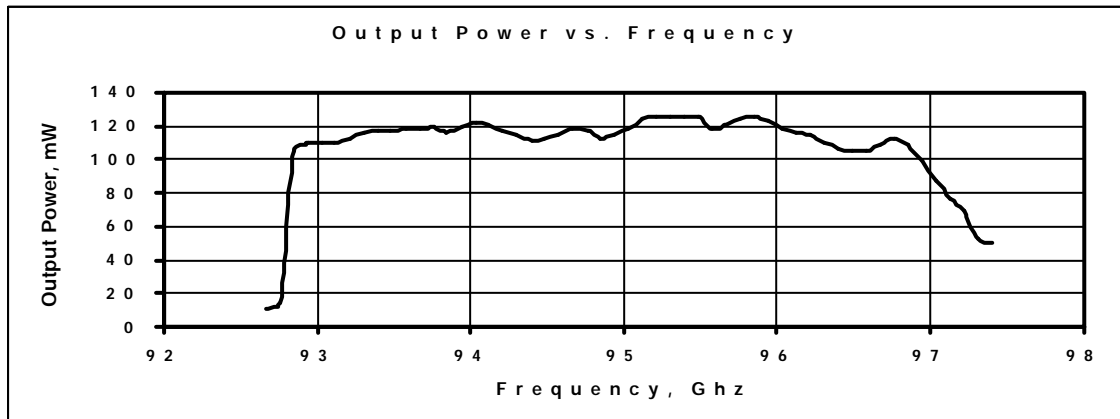
- High multiplication factor;
- Low insertion phase noise $20 \cdot \log(M)$, M- multiplication factor.



Additional IMPATT Injection Locked Power Amplifier provides more than 70 mw output power. That allows to produce cost effective powerful phase lockable source in millimeter range of wavelengths.

PLS-1b (GPIB) is IEEE 488.2/GPIH/HP-IB compatible device that can be easily integrated in HP-IB subsystems. Additional External reference input can be used to get frequency stability better than 10^{-6} per one degree C°.

Each Synthesizer is individually calibrated for output power versus frequency. The resulting data (supplied with the unit) are illustrated on the plot below:



These generators are completely self-contained, including all control and power supply systems required to drive the device. It can be produced for 220V/50Hz AC, or for 110V/60Hz AC primary power.

Electrical Specifications	
Output Frequency Range (GHz)	93 – 97
Output Frequency Step Size (MHz)*	91
Output Power, (mW, min)	90
Output Frequency Stability per one degree C	10^{-6}
Phase Noise (dBc/Hz, max)	
Offset =	
1 kHz	-75
10 kHz	-88
100 kHz	-105
Input Reference Frequency (MHz)	10 ± 0.001
Input Reference Signal Voltage pick to pick (V, max)	2

*Can be changed optionally

Common Specifications

Operating temperature range, C	5-40
AC Input Voltages:	220 V, 50 Hz (110V/60 Hz)
Consumed power, VA	160
Size	48x48x17 cm
Weight	17 kg
Output Waveguide, Flange	WR-10, UG-387/U-M
Input Reference Connector	BNC.



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