



VMESG-2000

SYNTHESIZER SPECIFICATION



**WIDE FREQUENCY RANGE:
2.0 to 20 GHz**

FEATURES

- Broad Frequency Bandwidth: 2.0 to 20 GHz
- Output Power +22 dBm
- 10 usec Speed
- -150 dBc/Hz Phase Noise Floor
- Low Phase Noise: -112 dBc/ Hz at 10 KHz Offset, at 20 GHz

BENEFITS

- Light Weight
- Small Size
- Low Cost
- High Performance



OPTIONS

- Frequency Range: 0.05 to 20 GHz
- Frequency Resolution: 1 Hz
- Fast Switching Speed: 5 usec
- Ethernet Interface
- GPIB Interface
- RS- 232 / RS-485 Interface
- BCD Interface
- Frequency Modulation?

APPLICATION

- SIGINT
- EW
- Flight Line Testers
- COMINT
- ELINT

GENERAL DESCRIPTION

The VMESG 2000, 2-20GHz Synthesizer was developed as a “Synthetic Instrument” for flight line test equipment, where its small size, light weight and high performance characteristics are paramount. The modular design of this instrument allows for many performance and interface options. Elcom’s VME Series Synthesizers are similar in design to the IBS Series with the added benefit of an extremely compact 2 slot design.



SPECIFICATIONS

Frequency Resolution:	10 KHz
Switching Speed:	10 usec Standard (< 10 usec Contact Factory)
Spurious: (All typical within ± 1 GHz of Carrier)	2 GHz – 5 GHz: -72 dBc 5 GHz – 10 GHz: -66 dBc 10 GHz – 20 GHz: -60 dBc
Other Spurious: (Typical)	2 GHz – 5 GHz: <-60 dBc 5 GHz – 10 GHz: -66 dBc 10 GHz – 20 GHz: -54 dBc
Harmonics:	-35 dBc
Output Power:	+22 dBm
Flatness:	± 1 dB

SSB Phase Noise @ Fc = 20 GHz:

Offset	dBc/ Hz
1 KHz	-103
10 KHz	-112
100 KHz	-115
1 MHz	-118
10 MHz	-133

Input Reference:	+100 MHz, 0 dBm ± 2 dB
Pulse Modulation:	70 dB ON/OFF Ratio
Temperature Range:	-20C to 60C Operating -40C to 70C Storage
Power Requirements:	+3.3V, +12V, 40 Watts Typical
Weight:	< 5 Pounds
Form Factor:	VME 2 Slots
Interface:	VME 64x



- OPT 100 Fast Switching, < 10 usec (Contact Factory)
- OPT 101 Frequency Resolutions, Selectable to 1 Hz
- OPT 102 Ethernet Interface
- OPT 103 GPIB Interface
- OPT 104 RS- 232 or RS-485 Interface
- OPT 105 BCD Interface

REVISIONS

REV	DESCRIPTION
F1	PRELIMINARY TITLE SHE DRAWING P. PATEL, 04/18/11
F2	REVISED, LED CHANGED ON F.7 PCN-P1123, 06/24/11

NOTES:

- DESCRIPTION AND APPLICATION: FREQUENCY SYNTHESIZER FOR USE IN COMMUNICATION EQUIPMENT.
- REQUIREMENTS:
 - GENERAL:
 - MATERIAL: AL ALLOY 6061-T651 OR 6062 H32 PER QQ-A-250/11.
 - FINISH: HOUSING AND COVERS: CHEM FILM PER MIL-DTL-5541F, TYPE-II, CLASS 3. FRONT PANEL: PAINTED, SILK SCREEN.
- MECHANICAL:
 - CONNECTORS:
 - REF IN(J1): SMA TYPE JACK, (FEMALE)
 - REF OUT(J2): SMA TYPE JACK, (FEMALE)

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DESIGNED	P. PATEL	12/20/10	PROD. DESC: SYNTHESIZER, 3-28 GHz, VME/J13 SLOT VMESG-1003
DRAWN	P. PATEL	12/20/10	
CHECKED	D. PATEL	12/20/10	
APPROVED	D. PATEL	12/20/10	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES: FINISH: 1 TO ±.010, 2 TO ±.005 HOLE: ±.003 HOLE: .25 THREADS: OTHER FEATURES SHOWN BY NOT NOTED UNLESS BY THE SIZE.			Elcom Technologies, Inc. 11 Volvo Drive Rockleigh, NJ 07647 USA www.elcomtech.com
0.750 1/1			SHEET 70500-00-VCD P2

VMESG Synthesizer Mechanical Outline



FEI-Elcom Tech

ABOUT FEI-ELCOM TECH

FEI-Elcom designs and manufactures instruments and modules in the RF and Microwave frequency spectrum for broadband and narrow band applications in ATE, Aerospace/Defense, SIGINT and commercial communications. Proprietary technologies include low phase noise fast switching direct analog synthesis, low noise indirect PLL designs, and RF DSP up to 40GHz.

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